Paper TRADE JOURNAL

JULY 20, 1951

DO YOU KNOW YOUR HIDDEN LABOR COSTS?
..... See Page 22

a name you can trust

There is a Geigy Direct Dye for every paper mill need

Diphenyl Fast Yellow C5GL Conc • Diphenyl Fast Yellow FA Conc
Diphenyl Fast Orange W5 • Diphenyl Fast Scarlet R5 Supra
Diphenyl Fast Scarlet 4BAN • Diphenyl Fast Red 5BL Supra I
Diphenyl Blue 2B Extra Conc • Diphenyl Brilliant Blue FF Supra
Diphenyl Brilliant Violet DB Conc • Diphenyl Violet BV Supra
Diphenyl Green BY Supra • Diphenyl Brown 3RB Conc
Diphenyl Brown 3GT Supra

May we show you where these quality dyestuffs will be an aid to better quality papers? Our laboratory facilities are at your disposal.

**DIPHENYL—Geigy's registered trademark for Direct Dyestuffs.*

Geigy

GEIGY COMPANY, Inc.

Dyestuff Makers Since 1859 **89-91 BARCLAY STREET, NEW YORK 8, NEW YORK**

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IN GREAT BRITAIN: The Geigy Co., Ltd., National Buildings, Parsonage, Manchester

"Whether there be Prophecies, They Shall Fail"

. . . those words, spoken by a redoubtable seer nearly 2000 years ago, have probably never been so pertinent as they are today. For today's most carefully computed prediction is liable to prove completely false tomorrow. *We* certainly are not attempting to prophesy anything, but are simply keeping "our noses to the grindstone," to provide the paper industry with quality chemicals . . . as we have done for years.

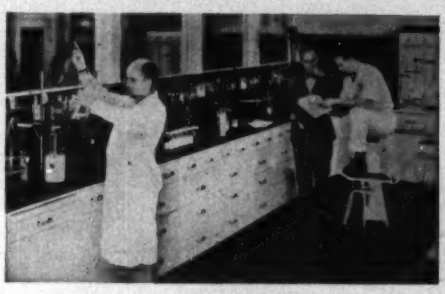
The pictures shown here join with our headline to emphasize this message we would leave with you: *Whatever the uncertainties ahead, you can do no better than call upon the experience, skills and facilities accumulated by Nopco*.*

One of the oldest and most reputable suppliers of paper processing materials, we are confident we can afford outstanding assistance to the pulp and paper industry as it goes to work today in the interests of national defense.

In the manufacture of paper board particularly—destined to play a major role in meeting the packaging needs of America's all-out defense effort—we believe we can be of special help. But whatever your product—paper, paper board, or insulating board—we are ready to make recommendations and supplement laboratory data with technical aid right in your mill.

Send us your specifications now. At the moment, we are prepared to supply you with defoamers, sizes, and all the other chemicals for which we are famous. It will remain our fixed policy to serve you to the best of our ability, *come what may.*

Nopco headquarters — Harrison, N. J.



A section of Nopco's paper laboratories

Applying paper coating mixture to hand sheet.

Testing to determine effectiveness of sizes.

NOPCO

INVOLVED THIS PROCESS

NOPCO CHEMICAL COMPANY

HARRISON, NEW JERSEY

Branches: Boston, Chicago, Cedartown, Ga., Richmond, Calif.

*REG. U. S. PAT. OFF.

BROWN INSTRUMENTATION IS THE MODERN APPROACH FOR PAPER INDUSTRY PROCESSES

Master kiln control cubicle at large Southern newsprint mill. Included are recorders for: (1) lime mud storage level, (2) filter cake thickness, (3) O_2 content of exit gas, (4) temperature of exit gas, (5) producer blast temperature, and (6) firing temperature. Push-buttons and signal lights provide completely centralized control.

GET MORE AND BETTER LIME

. . . Through Engineered Control of Rotary Kilns

What a Honeywell Rotary Kiln Control System will mean to you

1. *Increased production of lime—correct temperature increases throughput.*
2. *Uniform lime quality—better operation of causticizer.*
3. *Reduced operating cost—correct heat balance minimizes fuel consumption.*
4. *Reduced kiln maintenance—avoidance of excessive temperatures increases life of kiln refractory and auxiliaries.*

For additional information, write for Data Sheet 2.9-17A.

REGARDLESS of the type kiln you use—whether it is gas or oil fired—a Honeywell custom engineered control system will help you increase the production of high quality lime. You'll save fuel and valuable man-hours too.

A Honeywell control system is engineered to fit *your* kiln and is designed to accomplish the following specific objectives: (1) to achieve maximum production of properly calcined lime, (2) to hold fuel costs to a minimum by maintaining the proper heat balance, (3) to save man-hours through centralized location of instruments and controls, and (4) to minimize kiln maintenance through prevention of excessively high temperatures.

For instrumentation engineered to *your* specific requirements, call your local Honeywell engineer. MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4510 Wayne Ave., Philadelphia 44, Pa.

MINNEAPOLIS **Honeywell**

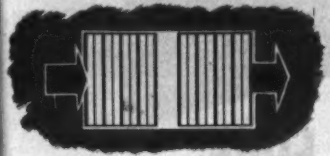
Brown Instruments

These 10 BIG Features Make Western Precipitation COTTRELLS Outstanding in the Paper Industry

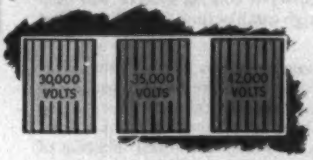
When considering COTTRELL Equipment for salt cake recovery, or any other application in the paper industry, remember this . . . *Western Precipitation Corporation not only pioneered the first commercial application of* COTTRELL *equipment made in any industry, but also pioneered the first application of* COTTRELL *equipment in the paper industry.*

Among the vitally important advantages found in Western Precipitation COTTRELLS, the following are particularly important in paper mill installations . . .

1 Sustained Year-After-Year Efficiency: The recovery efficiency of Western Precipitation COTTRELLS does not fall off in service. All parts are of ample design to maintain guaranteed over-all efficiency year-after-year —not for just a single acceptance run.



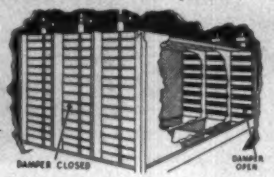
2 Higher Recovery: The horizontal flow design of Western Precipitation COTTRELLS eliminates collected material falling countercurrent to incoming gas stream This assures higher recovery, minimum resuspension of recovered material in gas stream.



3 Maximum Performance: Horizontal flow of Western Precipitation COTTRELLS permits use of multiple electrical sections so that voltage in each section can be varied to dust loading for maximum recovery without arc-over or electrical breakdowns.

4 Lower Over-all Cost: When comparing COTTRELL costs, be sure to compare total *installed* cost, including duct work.

5 Simpler Maintenance: Because all interior parts and electrode systems are readily accessible, Western Precipitation COTTRELLS are far easier to maintain and service. Saves "down" time, saves repair costs.



6 Greater Adaptability: Horizontal flow design permits use of multi-vane dampers in multiple-unit installations. Thus, one unit can be shut off completely to permit maintenance operations without closing down entire Precipitator. Also, the dampers can be used in slightly-closed position to assure more uniform gas distribution.
On single-unit installations, chain curtains assure uniform distribution of gases. Curtains are easily kept clean by shaker mechanisms provided.

7 "V"-Shaped Hoppers: Horizontal design permits use of continuous "V"-shaped hoppers for collecting recovered material. Steeply-sloped walls in this type of hopper prevent build-up or bridging of recovered material.

8 Space-Saving Compactness: Not only do their horizontal design permit maximum compactness in Western Precipitation COTTRELLS, but various sections of a unit can be arranged for indoor installation in space above cascade evaporators, thus utilizing space otherwise wasted.

9 All-Weather Construction: Western Precipitation COTTRELLS are built for both indoor or outdoor installation, and this organization has had extensive experience with special construction to prevent excessive corrosion in rigorous northern climates.

10 More Extensive Experience: Since pioneering the commercial application of COTTRELL Precipitators over 42 years ago, Western Precipitation has consistently led in developing one unique advancement after another. Such features as 4-Point Electrode Suspension that eliminates misalignment of electrodes and reduction in recovery efficiencies . . . Unusually Rugged Rapper Design that assures proper cleaning of electrodes . . Extensive Experience with all types of electrode designs . and many other advantages assure you the ultimate in COTTRELL design and efficiency when you bring your recovery problems to Western Precipitation engineers.

Without obligation our nearest representative will gladly make Western Precipitation COTTRELL *experience available to you for solving your particular recovery problem. Why not contact him today?*

IMPORTANT! In addition to COTTRELL *Electrical* Recovery equipment, Western Precipitation Corporation also designs and installs the well-known MULTICLONE *Mechanical* Collectors for hogged-fuel fired boilers. These units are unusually compact, highly efficient and can be readily fitted into existing plants at minimum installation costs. *Write for details!*

Send for Helpful Literature

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Paper TRADE JOURNAL

VOL. 133 **JULY 20, 1951** **No. 3**

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NEXT WEEK

Are your anions bothering you and how much? Cohen, Farrant and Watson discuss the effects of Electrolytes on the properties of your pulp and paper.

REMEMBER THESE DATES

JULY 24: American Pulp & Paper Mill Superintendents Assn., Michigan Division, Annual Field and Sport Day, at the Kalamazoo Country Club, Kalamazoo, Mich.

SEPT. 6-8: American Pulp & Paper Mill Superintendents Assn., New York, Canadian Division, meeting at Saranac Inn, Saranac, N. Y.

SEPT. 14-15: American Pulp & Paper Mill Superintendents Assn., Northeastern Division, meeting at Poland Spring House, Poland Spring, Maine.

SEPT. 14-15: American Pulp & Paper Mill Superintendents Assn., Northwestern Division meeting at Northern Holiday Resort, Marenesco, Mich.

SEPT. 16-19: American Institute of Chemical Engineers, Regional Meeting, French Lick, Ind.

SEPT. 20: American Pulp & Paper Mill Superintendents Assn., Michigan Division, Fall Meeting at Hotel Harris, Kalamazoo, Mich.

OCT. 10-12: American Pulp & Paper Mill Superintendents Assn., Southern and Southeastern Div's., George Washington Hotel, Jacksonville, Fla.

OCT. 15-18: 6th Engineering Conference, Technical Assn. of Pulp and Paper Industry, General Oglethorpe Hotel, Wilmington Island, Savannah, Ga.

OCT. 29-31: National Foreign Trade Convention, Waldorf Astoria, New York City.

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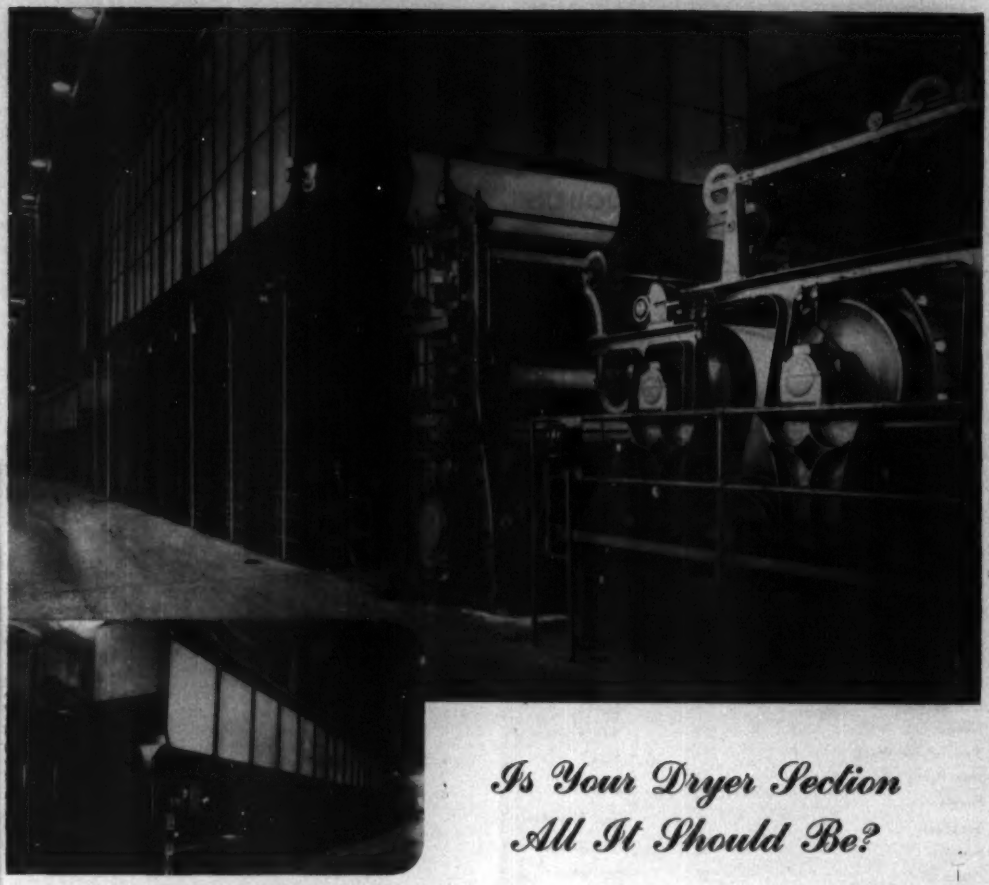

Is Your Dryer Section All It Should Be?

• Is the capacity of your dryer section adequate? Could you step up the speed of your wet end if you had more dryers?

Have you automatic transfers on your rope carriers?

Is the lubricating means automatic and leak proof?

Have you the required doctors on the wet end dryers?

How about your steamfits and syphons —an effective drainage system?

Do you have air-operated brakes on your dryer section—remote control operation? Inching drives?

All such features and controls are present on the more recent dryer sections built by Black-Clawson.

If required to enlarge your dryer, assign the work to Black-Clawson and include the above improvements.

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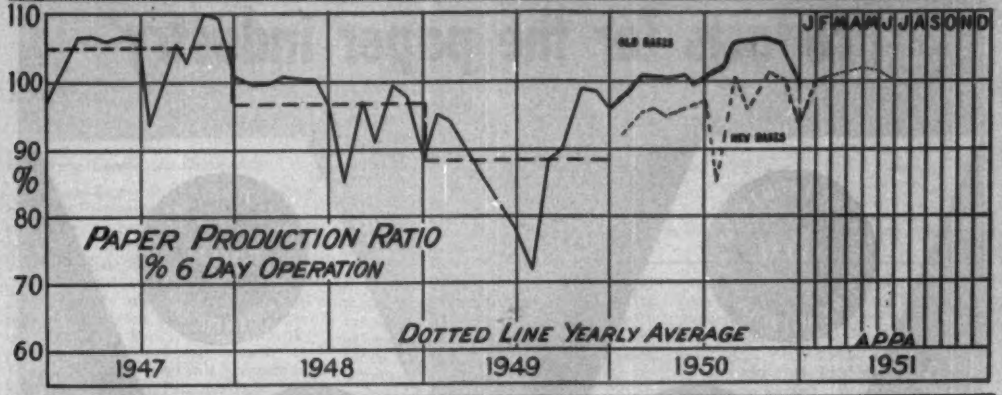
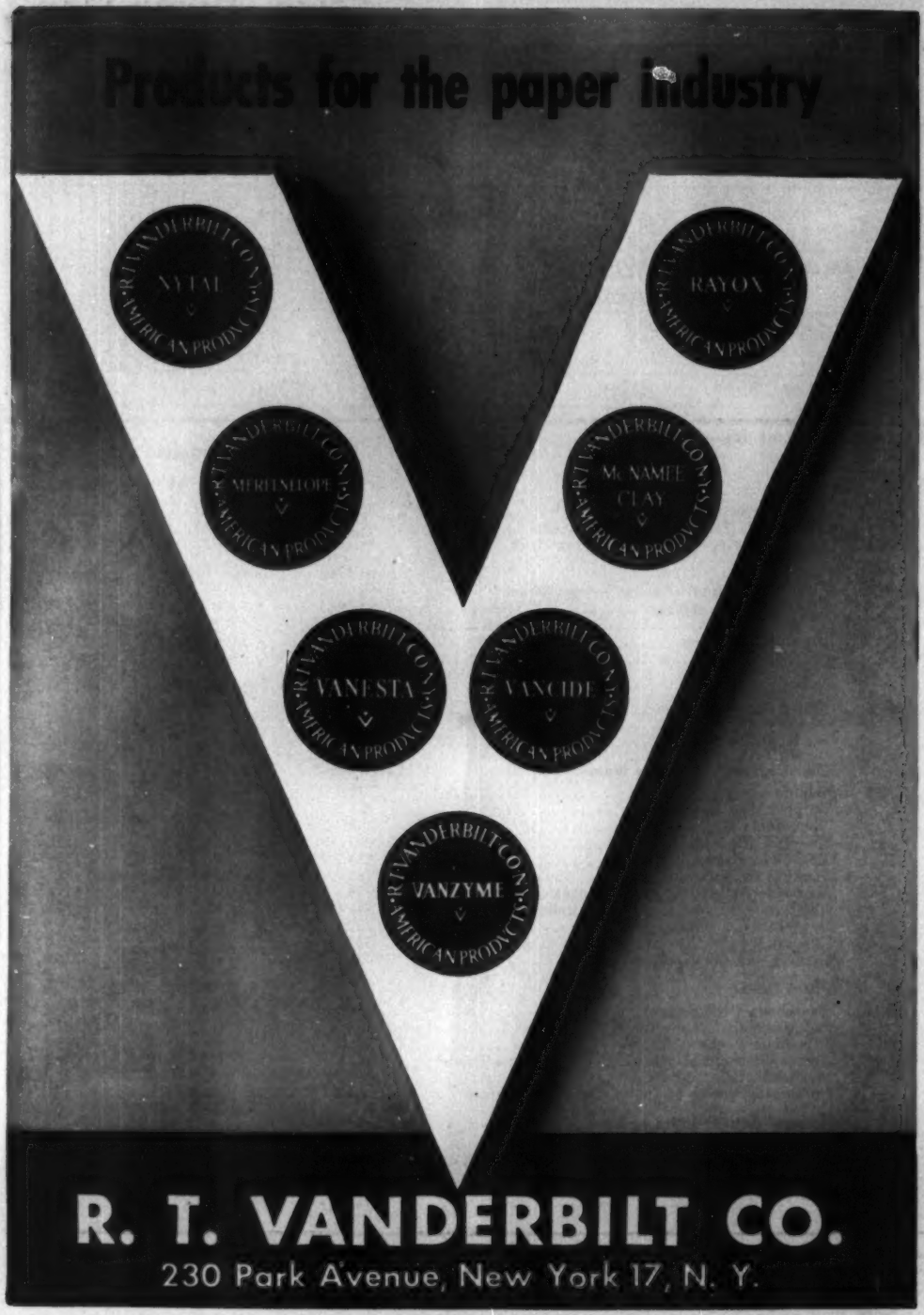


Brief of Important Figures

Source	Production	WEEK ENDING July 7, '51	June 9, '51	July 8, '50
APPA	Paper Production Percent Capacity[4]	62.6	104.1	51.8
	Unbl. Kraft Paper Production Percent	72.1	99.7	96.8
NPA	Paperboard Operating Ratio Percent Inch Hours	62	102	55
		May 1951	**Apr. 1951x**	**May 1950**
APPA	Paper Production[6] (Except Newsprint and Building Papers) ....Tons	921,000	874,087	842,500
	New Orders ....Tons	904,000	906,748	836,000
	Unfilled Orders ....Tons	996,500	1,016,525	535,065
	Shipments ....Tons	923,000	875,577	842,000
		June 1951	**May 1951**	**June 1950**
NPA	Paperboard Production ....Tons	977,214	1,251,633	846,030
	New Orders ....Tons	873,807	1,264,120	855,016
	Unfilled Orders ....Tons	547,963	658,722	394,110
	Our Customers Activities Index[1]	**Latest Mo.[5]**	**Previous Mo.[5]**	**Year Ago[5]**
FRS	Manufactures Total Index	231	230	197
	Durable Mfg. Index	275	275	221
	Nondurable Mfg. Index	195	194	178
	Chemical Products Index	299	296	253
	Mfg. Food Products Index	154	150	150
	Printing and Publishing Index	185	178	174
ODC	Magazine Advg.-Printer's Ink Index	338	343	327
	Retail Sales Combined Adjusted Index	341.1	342.3	309.8
	Drug Index	232.1	241.2	224.6
	General Merchandise Group Index	327.5	316.6	293.0
	Grocery and Combination Index	431.0	432.7	378.8
	Prices Index			
BLS	Consumers Price Index[1]	184.6	184.5	168.5
	Wholesale all Commodities[2]	183.5	184.0	152.9
	Wholesale Foods[2]	185.7	186.6	155.3
	Commodities other than Farm Products and Foods[2]	172.1	172.4	146.4
	Wholesale Pulp and Paper[2]	196.2	196.3	155.4
	Purchasing Power of Dollar, Consumers Prices[1]	54.2	54.2	59.3
	General Activity Index			
FRS	Mfg. Production-Worker Payroll	429.4	433.6	337.2
	Unemployment Compensation Initial Claims (M)	983	719	1,543
	Miscellaneous Carloadings–Thousands of Cars	1,580	1,979	1,434
	Electric Output (Million KW hr.)	34,431	36,172	30,191
PTJ	Average 32 P & P Common Stocks as of July 14	$38.24	$37.77	$30.25

[1] 1935-39=100 Unadjusted Index
[2] 1926=100
[3] New 6-7 day basis.
[4] For Five Weeks.
[5] For details see APPA Monthly Statistical Summary—April 1951 Estimated Figures
[6] Latest Month Available on Request
x Revised figures.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Paper TRADE JOURNAL

TRENDS

Office of the PAPER TRADE JOURNAL, Wednesday, July 18, 1951.

Inventory Conditions Discussed

Though business opinions about mounting inventories and the lag in consumer buying continue to vary, at least one leading economist supports the view that the situation is grave.

Expressing doubt that defense production would add enough volume during the remainder of the year to make up for the lag between consumer buying and inventory accretions, Dr. Julius Hirsch, economic consultant, and adviser to OPA during World War II, said selling efforts should be increased in the Fall to dispose of the steadily climbing stocks.

The Department of Commerce, Dr. Hirsch said, has seemed inclined to minimize the importance of the inventory increase which, at all levels of distribution, had increased from June, 1950, to May 31, 1951, from $54 billion to $70 billion. Inventories in the entire economy, except for farm products, increased in the same period in dollar value about 30 percent, while sales gained only about 9 percent.

It is probable, Dr. Hirsch believes, that for a number of months we shall have a civilian production less than last year by about $1 billion to $1¼ billions a month, and that at the same time defense production will catch up.

"But it is rather doubtful," he said, "whether this catching up will reach or go beyond the present volume by more than $1 billion a month on the average for the balance of 1951. This might indicate that the great boom expected from expansion of defense production might not materialize to the degree which is expected; because it will, at best, compensate for the slack of civilian business which is brought about by last year's overproduction, leaving more commodities on the shelves and in the warehouses than could be sold with all efforts."

Non-defense business, in Dr. Hirsch's opinion, should not give in with its efforts to increase business. The hoped-for defense boom paradise promised by Fall might not be as rosy for various business lines as painted. "Our civilian economy, over-expanded and misled by the scare-buying, scare-investment and scare stockpiling, is producing much more than we can consume," he believes.

OBE Reports $1.5 Billion Rise

Total business inventories for May were estimated at $69.7 billion, the Office of Business Economics announced last week.

After allowance for seasonal variation, book value at the end of May was $1.5 billion over April, and price factors accounted for only one-tenth of the increase. Manufacturing inventories increased by a billion dollars, wholesalers almost $350 million, retailers' $150 million.

Census Report on Papers

Bureau of Census report on Wholesale Trade for the month of May, 1951, by geographic divisions, showed a sampling of 63 paper establishments with dollar sales 40 percent ahead of May, 1950, and inventories 10 percent ahead. "Stock-Sales Ratio" and other data by geographic divisions are reported in *Table I*.

WHOLESALERS' SALES AND INVENTORIES—PAPER AND ITS PRODUCTS

May, 1951 Compared with May, 1950

	Sales		Inventory		Stock-sales[1] Ratios		
	% Dollar Increase	Number Reporting*	% Change	Number Reporting	May 1951	May 1950	April 1951
Total	+40	63	+10	38	118	145	121
New England	+26	5	+8	4	179	202	210
Middle Atlantic	+49	19	+3	10	84	122	82
East North Central	+36	17	+7	12	82	105	87
West North Central	+36	4	*	*	*	*	*
South Atlantic	+42	6	*	*	*	*	
South Central	+46	5	*	*	*	*	*
Pacific	+35	7	+24	6	272	266	262

*Insufficient data to show separately.

[1] Stock-sales ratios are percentages derived by dividing stocks, at cost, by total sales (including any direct shipments and consignment business) for an identical group of firms reporting inventories in conjunction with sales.

Materials

Casein.— Paper industry demand for casein showed some pickup during the week and brought a tone of optimism to the market. Inquiry reveals that the spurt is coming from coaters who are anticipating augmented demands for advertising to support the buyers' market.

Domestic output during May was estimated by the Bureau of Agricultural Economics at 3,300,000 pounds, the largest for the month since 1947 and 40 percent over 1950's month. Manufacturers' stocks on May 31 stood at 3,945,000 pounds, the highest for the date since 1946, and 35 percent higher than May, 1950. Annual consumption by U. S. industry is estimated at some 70 million pounds, 90 percent of which is imported.

Pricewise the market is unchanged at 29½/30½ for French, 39½ cents for the Argentine product, and 40½ to 43 cents for domestic grades which are frozen by the GCPR at that level.

Chlorine.— Heavy water requirements are cutting into available supplies to so great a degree that the industry is getting only about 80 percent of its requirements. Switches in production schedules and some cutbacks will probably plague the large consumers until the Fall when water demand diminishes.

Rated fifth-rank in output among big-tonnage chemicals, its output nearly 200 percent over that of 1941, chlorine has been in almost continuous short supply since World War II. A production goal of 10,000 to 11,000 tons per day by 1953 has been set by government and industry jointly. Output is scheduled to be 7,500 tons by the end of 1951, and it is expected that by the close of 1952 full government needs can be met.

New construction involves an $8,500,000 expansion at Natrium, West Va., which should commence production in about 18 to 20 months. A new mercury cell chlorine-caustic soda unit will shortly get into construction near Syracuse, N. Y., which will about double the capacity of the producer's Syracuse facilities. Also announced is expansion of Hopewell, Va., chlorine plant which will take 18 months to two years to complete.

Rosin.— The decline in gum rosin prices which was started by rumors of a Korean truce on July 3 took papermaking grades from the ceiling of $9.16 on July 2 to $7.60 on July 12. Market steadied with decision of producers that it would be preferable to put stocks under Government loan than to let them follow the market down further. Support level is $7.37 per 100 pounds. Stocks are at flood and in ample supply.

Sulfur.— Proposed industry sulfur allocations are being delayed, says NPA, because users have not sent in the forms—due on June 28—telling how much they used in 1950 and for what purposes.

Third quarter world sulfur quotas, announced by the International Materials Conference in Washington last week, are covered elsewhere in this issue.

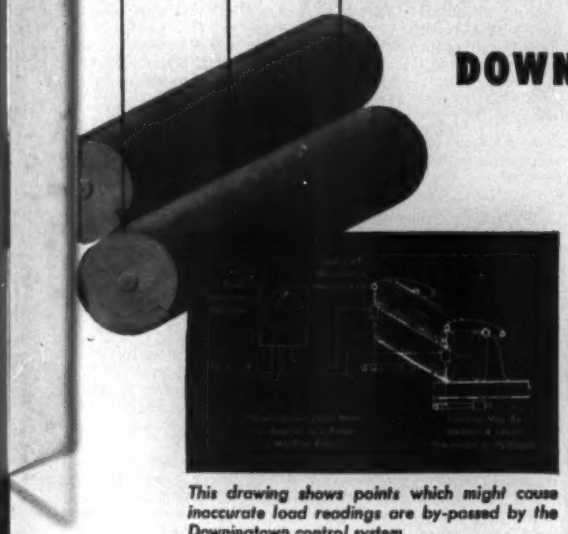
May shipments of native sulfur were 478,403 long tons, compared with total April shipments of 461,750, the Bureau of Mines reports. For the period of January through May, 1951, shipments were 2,050,370, compared with 2,174,442 in 1950. —E.P.N.

Paperboard Production (Tons)*

	July 7 1951	June 30 1951	July 8 1950
Production	157,089	244,242	129,356
New Orders	267,786	221,045	226,087
Unfilled Orders	657,277	547,936	491,744

* Source: NPA.

-NIP pressures are *ACCURATELY* measured by the DOWNINGTOWN LOAD METER



This drawing shows points which might cause inaccurate load readings are by-passed by the Downingtown control system.

Most ordinary gauges used to measure the load on a sheet at various pressure points, fail to deliver an accurate measurement because the readings are influenced by . . .

- pin friction
- knife edge friction
- eccentric and misaligned rolls
- piston packing and gland friction
- piston leakage and other factors

The Downingtown Load Meter exactly measures the load at each end of the rolls, *directly*. Thus, accurate loading across the entire roll is assured with proper crowning, and pressure is controlled as required by the sheet made.

The Downingtown Load Meter has no moving parts to wear, does not change calibration with use nor normal temperature variations. It is simple, inexpensive and easy to install.

Write for complete information about the Downingtown Load Meter developed expressly for the paper and board making industry.

DOWNINGTOWN MANUFACTURING CO., DOWNINGTOWN, PA.

Pacific Coast Representative: John V. Roslund, Pacific Bldg., Portland 4, Oregon

DOWNINGTOWN

DESIGNERS AND BUILDERS OF PAPER, BOARD AND FELT MACHINES SINCE 1880

News of the Week

Paper TRADE JOURNAL

MILL LOOMS FOR ATLANTA

A paper board mill may soon be erected in Atlanta, Ga. Atlanta Paper Co. is laying plans for construction of such a plant in that area. The mill, when completed, will cost an estimated $2 million.

Plans have been under consideration for some time, largely because the ordnance department of the U.S. Army had voiced the need of a plant which could supply it with container board. Army officials had expressed the belief that long hauls of waste needed for this operation could be cut down by location of a plant, or plants, in the area close to a good supply center of waste. It has been observed that the grade of waste here is constantly improving and much heavy board which can be converted is plentiful.

One of the sites for the plant now under consideration is located just north of Plant Atkinson, between the Chattahoochee River and the Seaboard tracks. An option has been taken on 28 acres. If this site is chosen, water will be taken from the Chattahoochee below the intake of water for the city.

The Atlanta Paper Co., which produces an assorted group of containers, will consume part if not the entire output.

The company already owns a paperboard machine.

The company, in laying plans for the new mill, feels this type of business has lagged far behind the general industrial development of Atlanta and, in fact, the entire Southeast. The production of board will do away with expensive shipping away of waste, which must be returned in its finished form.

COLUMBINE FINANCING

The Columbine Development Co. will continue its efforts to gain financing for the company's proposed Western Colorado pulp mill despite refusal of a government loan by the NPA.

Preston Walker, Columbine president, said that negotiations are still underway to finance the mill through private capital. He did not name the private interests with which Columbine is negotiating.

Mr. Walker, who was unsuccessful in obtaining a $15,500,000 loan for the project, last week appeared before a congressional small business committee in Denver and blasted "the absolute lack of understanding or willingness to learn on the part of defense agencies of the vast potential resources of the western part of America."

The NPA rejected the Columbine application on the ground that "sufficient pulp capacity necessary to meet defense requirements until 1953 can be obtained without the assistance of a government loan." Walker recently obtained a ten-month extension of the Columbine contract with the forest service.

Speaking before the congressional committee Walker said that the NPA action was a "surprise" in view of the fact that "opinions of the nation's top economists on pulp and paper did not begin to jibe with the figures claimed by NPA." Walker said that, by government statements, "pulp and paper are just as critical as steel and in just as short supply."

Following Walker's testimony, Representative William S. Hill of Colorado, who conducted the hearing, advised Mr. Walker to continue efforts for government aid, "even if you have been pushed around."

APPLY FOR ALASKAN MILL SITE

JUNEAU, Alaska—Formal application for a pulp mill site at Auk bay has been received in the regional office of the forest service.

Application was made by Bernhard B. (Ben) Mullen of Juneau, on behalf of the Alaska Cellulose company, for a mill location at Indian point.

Details of the application were not revealed, but it was understood that the company proposes to establish a mill with a 200-ton daily capacity.

YATES CONSTRUCTION PLANNED

Construction will begin soon on the $10 million pulp mill and power plant to be built at Yates, 120 miles west of Edmonton, Alta. George Roberts, an official of New Pacific Coal and Oil, Ltd., of Toronto, whose subsidiary, North Western Pulp and Powder, Ltd., will build the plant, said engineers have completed a preliminary survey.

Under an agreement with the Alberta Government announced last month, construction of the pulp mill must start by May, 1952, and be in operation by 1954. The mill will produce a minimum of 200 tons of pulp a day from its 2,000 square miles of timber leases. Engineers have estimated that the timber reserves will give an uninterrupted supply of pulpwood for 133 years.

LESAVOY BUYS GENERAL PAPER

Lesavoy Industries, Inc., have purchased the Pennsylvania General Paper Corp., Coatesville, Pa., from West Disinfecting Co. The General paper mill is now engaged in the manufacture of industrial paper toweling and cable wrapping, and is equipped to produce a variety of papers for industrial use. Plans are now under way for greatly enlarging and improving production capacity.

ST. REGIS BUILDS BAG PLANT

St. Regis Paper Co. (Canada) Ltd. will commence construction at once of a multiwall bag plant at Dryden, Ont.

The new plant, which will replace one now leased from the Dryden Paper Co., Ltd., will represent the most modern construction and design. It will provide a capacity three times that of the present plant and will call for an increase in employment by some 50 percent.

The decision to proceed at once with the bag factory coincides with consummation by the company of an extension on a broadened scale of an agreement with the Dryden Paper Co., Ltd. for a long-term supply of the kraft paper used by St. Regis for conversion into multiwall bags at that center.

ITALY EXPANDS RESEARCH

The Italian government has approved expansion of Palermo's paper and fiber experimental station. The center, established with the aid of Sicilian Chambers of Commerce, encourages research and study in the development of cellulose, paper and artificial fiber products. It also will train skilled workers in these industries.

OBJECTS TO PRESS REPORTS

THOROLD, Ont.—S. A. Stevens, vice-president of the International Brotherhood of Pulp Sulphite and Paper Mill Workers Union, sent a telegram to Justice Minister Stuart Garson, saying recent press reports regarding an investigation of the industry were unjustified.

"Our union," Mr. Stevens wired Garson, "takes strong exception to the unwarranted disparagement of the fine paper mills which the press reports of an investigation have already created and most respectfully suggest that you issue an official statement giving these mills the same fair treatment that you have given to the Canadian newsprint mills."

KNOWLTON PAY RISE

Pay raises averaging 2¼ cents an hour were included in the terms of the new labor agreement signed July 11 by officers of Knowlton Brothers and Circle Kay Local 463, International Brotherhood of Paper Makers.

The raises bring the wage scale at the paper mill up to the limit allowed by the wage stabilization board's Regulation 6.

WALDORF BUYS SCHULZ

A. George Schulz Co., of Milwaukee, Wis., paper board and box manufacturers, has been purchased by the Waldorf Paper Products Co., of St. Paul.

The Milwaukee company will be operated as a separate company under the same name and without change in official personnel.

NEW PAPER USES

Fan Uses Paper Disks

Dr. Peter Schlumbohm, the chemist who invented the Chemex coffee filter and about twenty other modifications of chemical apparatus now to be found in households, has applied Gaede's principle of herding molecules and shoving them toward an exit, to electric fans. Look at his fan and you see nothing but flat disks of very porous filter paper whirling around and creating a fine breeze. No blades. Nothing but the paper disks.

The paper disks, five in number, are mounted on the projecting shaft of a quarter-horsepower electric motor. As they spin, the paper disks assume the form of a very flat double cone. The deflected disks constitute the walls of a pumping space. Air is centrifugally whirled out of the pumping spaces so that a vacuum is created, partly because of the air's internal friction. The partial vacuum within the pumping space and the external atmospheric pressure explain the shape of a flat double cone assumed by the disks.

Air is centrifugally ejected through the narrow slot-like space between the edges of two adjacent disks. Fresh air rushes through the pores of the paper disks to fill the pumping spaces. As a result, dust and dirt are filtered out. The disks are black with dirt after some hours of use. So this fan not only creates a breeze but takes the dirt out of it.

PEOPLE

JOHN J. HAIN, treasurer of The Gardner Board and Carton Co., Middletown and Lockland, Ohio, a top official of the company since 1920, has retired. He will be succeeded by CALVIN F. LLOYD, assistant secretary and assistant treasurer.

Mr. Hain is retiring because of ill health. He will continue to serve as a management consultant.

W. T. GRAY has been named chairman of the board of Dominion Cellulose Ltd. and National Celluiose of Canada Ltd.; MENZIE GIBSON, president; ALFRED A. SLATER, vice-president and director, is now vice-president in Charge of Sales; MISS N. B. LUKE, a director, continues as secretary-treasurer and office manager and ALFRED A. COX, is continuing as Purchasing Agent and Personnel Manager.

R. A. HERTZLER, chief of the Forest Utilization Service, Southeastern Forest Experiment Station in Asheville, N. C., has been appointed Flood Control Survey Officer as a member of the technical staff of the Secretary of Agriculture. He will also work with the Federal Inter-agency River Basin Committee.

MERRITT W. McGAHAN has been appointed research assistant to the Research Foundation of the State University of New York, and will work on chemical debarking studies recently initiated at the State University College of Forestry, Syracuse, N. Y. Development of "simple, efficient, and controllable techniques" for loosening bark of living trees is the aim of the debarking studies started at the College in May. The project is jointly sponsored by the College of Forestry and nine pulp and paper companies and one chemical company, with the cooperation of other pulp and paper firms.

CHARLES G. CATLIN has been given the newly-created position of general manager of Allied Paper Bag Corp., Baltimore, Md.

Mr. Catlin will be in charge of all phases of the company's operations.

PAUL F. DICKMEYER, Secretary and Assistant Controller of the Fort Wayne Corrugated Paper Co., Indiana, has been elected to membership in the Controllers Institute, a non-profit organization of controllers and finance officers from all lines of business.

E. A. CHARLTON has been elected president of Central Paper Co., Inc. Mr. Charlton will retain the general managership of the company. At the same time JOHN G. TURNBULL, retiring president, was elected chairman of the board, and R. D. TERRIEN was made vice-president and treasurer.

ERNEST PERRIGO, Carthage, N. Y., has been named superintendent of the Carthage kraft paper mill of St. Regis Paper Co., succeeding WELLS FORBES, retired. Mr. Perrigo, with 35 years of service, has been assistant mill superintendent since 1948.

KEITH F. FLETCHER of Springfield, formerly associated with the Franklin Paper Co. of this city, has been appointed to the staff of the Springfield office of the NPA as an industrial analyst.

R. C. CRAIN has been appointed general superintendent of the Vancouver, Wash., plant of Columbia River Paper Mills.

Mr. Crain received M.S. and Ph.D. degrees from the Institute of Paper Chemistry, Appleton, Wis. His experience includes employment as chemist by the Gilbert Paper Co., Menasha, Wis., and the Whiting Plover Paper Co., Stevens Point, Wis. For the past thirteen years, he has been employed by the Nekoosa Edwards Paper Co. in various capacities including assistant technical director, research director, and most recently as superintendent of the Nekoosa mill. Mr. Crain expects to assume his new responsibilities on or about the first of August.

P. M. LODDENGAARD, former president of United Board & Carton Corp., announced his resignation from active participation in company affairs in a letter to Morris Kay, newly elected chairman of the board of directors.

William S. Stuhr was recently named president of United as a result of a change in corporate stock ownership.

ALBERT A. HALLY has been appointed sales manager of the industrial and commercial department of Industrial Tape Corp.

DENMAN F. JACOBSON has been appointed assistant New York Industrial District manager of Scott Paper Co.

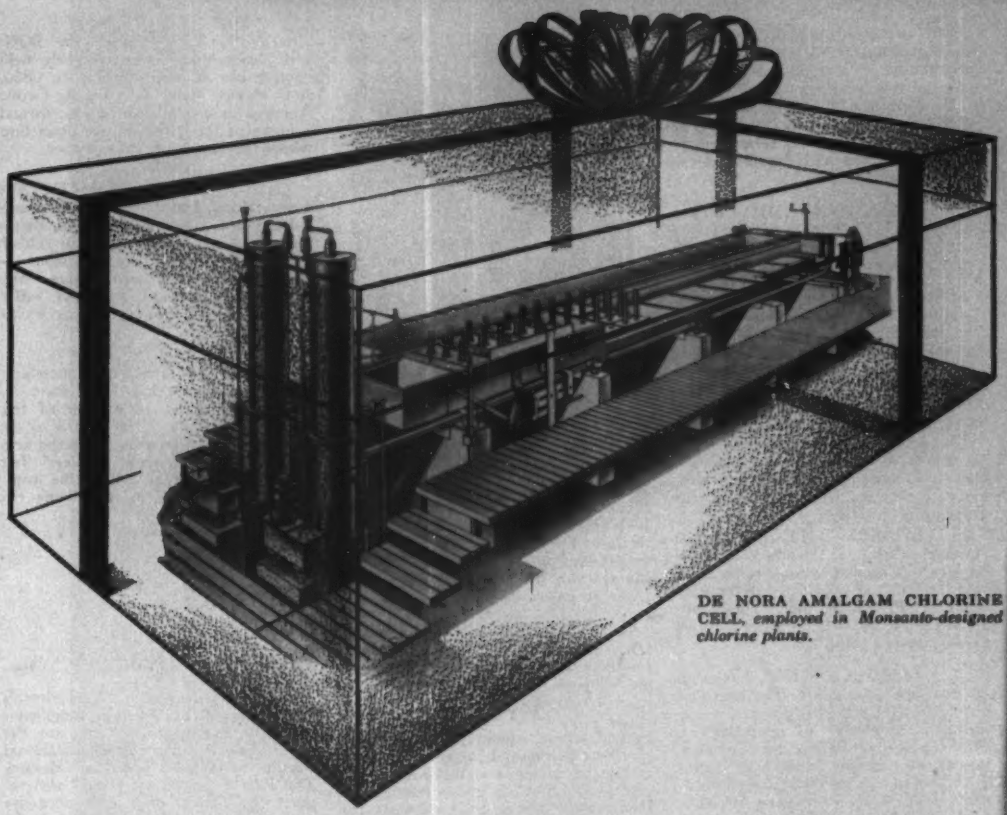
SUPPLIERS

LOCKPORT FELT CO., Lockport, N. Y., has appointed Leslie Ricketts administrative assistant. He formerly was secretary-treasurer of Hubbs & Howe Co., paper dealers.

KARL FINK, designer, has announced the opening of his own office at 515 Madison Avenue, New York 22. For the past five years, Mr. Fink has been art director of the Rahr Color Clinic, New York. Previously he was chief designer for Arthur S. Allen-Allcolor Co. where he took part in development of nationally distributed packages and other consumer goods in foods, drugs, confections, liquors, paints and home furnishings.

LYNCH CORP., manufacturers of packaging machinery, have appointed Joseph P. McCarthy general manager, and R. L. Sears sales manager of the Ohio Divisions.

GENERAL ELECTRIC CO. has appointed James H. Goss staff assistant to Nicholas M. DuChemin, general manager of their Small Apparatus Divisions. Formerly manager of engineering of the company's Control Divisions at Schenectady, N. Y., Mr. Goss will now make his headquarters at Lynn, Mass.



DE NORA AMALGAM CHLORINE CELL, *employed in Monsanto-designed chlorine plants.*

Marathon Paper Mills of Canada, Ltd., building Monsanto-De Nora chlorine plant

Progressive steps to balance its pulp mill requirements have been taken by Marathon Paper Mills of Canada, Ltd. The company is constructing a Monsanto-De Nora chlorine plant, employing the De Nora Amalgam Cell, at Marathon, Ontario.

R. B. McMullin Associates of Niagara Falls is retained by Marathon in a consulting capacity. Leonard Construction Company of Chicago is doing the engineering and construction. Foundation Company of Canada is acting as general contractor in cooperation with Leonard. The Marathon plant will produce 30 tons of chlorine daily and, in addition to chlorine, will manufacture rayon-grade caustic soda, electrolytic sodium sulfide, sodium hypochlorite and synthetic hydrochloric acid.

If chlorine is one of your present or future problems, look into the engineering service offered by Monsanto. The Monsanto Electrolytic Chlorine Process offers these advantages:

1. In addition to chlorine of high purity, it delivers rayon-grade caustic, up to 73%, without evaporators or purification.

2. All or part of the caustic production may be replaced by production of sodium sulfide or various other products.

3. It employs the De Nora mercury-type cell which has been used commercially for fourteen years. Of all mercury-type cells this is the most rugged and compact. It requires minimum maintenance and a minimum of floor space.

At your request . . . and without obligating you . . . Monsanto will send a representative to discuss its engineering service. Write, wire or 'phone MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri.

MONSANTO
CHEMICALS—PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

MONSANTO CHEMICAL CO. has awarded contracts for the design and construction of a multi-million dollar elemental phosphorous plant to The H. K. Ferguson Co., Cleveland, and the Morrison-Knudsen Co., Boise. The building operations are scheduled to start this summer with completion expected late in 1952.

AMERICAN CYANAMID CO. has appointed H. C. Milton assistant district sales manager of the Industrial Chemicals Division, Boston, Mass.

INTERNATIONAL PRINTING INK has completed new buildings for their branch sales offices and service stations in Cleveland, Ohio, and portland, Ore. They are the latest steps in IPI's continuing program of plant equipment modernization for faster, better ink service to printers.

The new home for IPI's Cleveland Branch is at 1325 West 73rd Street. New equipment of the latest type provides ample capacity for peak periods of printing activity.

In Portland, Ore., IPI's new branch building is at 1525 North West 23rd Avenue. A special section with latest safety devices is provided for the handling of IPI Anilox inks. These inks are assuming great importance in West Coast package printing.

CLINTON FOODS, INC., has elected two new members to the board of directors. Roscoe C. Wagner, vice-president in charge of operations at Clinton's Corn Processing Division, located at Clinton, Iowa, was elected to the board and also was named president of the Corn Processing Division. Earl Millard, president of American Partition Corp., a Clinton Foods subsidiary with factories at Milwaukee and Bound Brook, N. J., was the second executive elevated to the board of directors.

American Partition manufactures inter-locking partitions for shipping cases.

HOLYOKE BAR CO., which has been in business since 1890 manufacturing paper mill bars, bed plates and machine knives used by the paper industry, has been sold to Louis and Nathan Lapidus. The sale includes the building, machinery, and all work in process. It is understood that the new owners have a buyer who will take immediate possession and continue to run it as a going concern.

AMERICAN CAR AND FOUNDRY CO. has appointed William M. Hawkins, laboratory director at Berwick, Pa., senior research engineer at New York in the research and development department. George Reed, ACF manager of inspection, succeeds Mr. Hawkins at Berwick but with the new title of manager, general laboratories. Sheldon Thomas, formerly resident representative at the Chicago plant, has been appointed manager of inspection, succeeding Mr. Reed.

E. A. Murray

WORTHINGTON PUMP AND MACHINERY CORP., Buffalo, N. Y., reports that Herman H. Miller, manager of the Compressor Division, has relinquished the managership of his division to act as consultant to his successor, E. A. Murray. Mr. Miller, a 50-year Worthington veteran, plans to retire at the end of this year. He has volunteered to assist his successor, Mr. Murray, for his remaining six months with the corporation.

INTERNATIONAL NICKEL CO. OF CANADA, LTD., has increased its production of refined nickel by one million pounds monthly. This increase in nickel production is a result of the major program of expansion of underground mining capacity, metallurgical process changes and the installation of emergency facilities at Inco's Canadian plants. On April 25 it was pointed out that refined nickel production of the company would be increased by about a million pounds per month, or 5 percent by the year-end. This objective has already been realized, months in advance. Through this augmentation International Nickel's production will be at capacity of 21 million pounds per month — a higher level than in any peace-time year.

GENERAL ELECTRIC's Fractional Horsepower Motor Engineering Divisions at Fort Wayne, Ind., have named J. Herbert Behm assistant to the manager of engineering on special assignments. Lee R. Beard will serve as division engineer of the AC Motor Engineering Division; Ray D. Jones as division engineer of the Development Engineering Division; and I. E. Ross as division engineer of the DC and Specialty Motor Engineering Division.

MERRITT-CHAPMAN & SCOTT CORP. currently has on its books uncompleted construction contracts with a total value of $132,930,706—a record for the company. The current total of $132,930,706 in uncompleted construction contracts exceeds the $123,788,060 total value of all construction contracts completed by Merritt-Chapman & Scott during the five-year period from 1946 through 1950.

JOSEPH T. RYERSON & SON, INC., steel distributors, recently held open house at their Cincinnati, Ohio, steel service plant, 3475 Spring Grove Avenue, in celebration of the formal opening of their new, larger plant into which they moved last December.

THE TYER RUBBER CO., Andover, Mass., announces the recent appointment of Larry Johnson of Birmingham, Ala., as sales agent for rubber covered rolls to the pulp and paper industry in the Southern States. Mr. Johnson will contact pulp and paper mills from Virginia to Texas inclusive.

F. C. HUYCK & SONS, Rensselaer, N. Y., announces that Dr. Edwin A. Rees has resigned as director of felt sales and member of the board of directors. He will continue with the firm as consultant on paper-makers' felt problems. Dr. Rees joined the company in 1920 and organized the research laboratory.

FORESTRY

FIRES UNDER CONTROL

U. S. Department of Agriculture's Forest Service has brought under control four raging forest fires on the Gila, Apache, and Crook National Forests in Arizona and New Mexico. The Pacific Northwest region also reports the control of a 2,500-acre fire in high-value timber country of the Willamette National Forest in Oregon.

The four fires now under control are: Black Range Fire, Gila Forest, 41,000 acres burned; Escadilla Fire, Apache Forest, 19,500 acres burned; Panil Fire, Crook Forest, 5,500 acres burned, and the Little Creek Fire, which burned at least 15,000 acres in the heart of the Gila National Forest Wilderness Area. High westerly winds swept the blaze into remote areas, difficult to reach. Men fighting this fire were serviced entirely by airplane.

Fire Control Chief, Carl A. Gustafson, reports that according to available statistics, Arizona and New Mexico are experiencing the driest conditions in their history. No change of weather is in sight, according to latest report. Humidity ranges from 5 to 6 percent. Temperature stands over the 100 degree mark.

The four southwestern fires during the past ten days have burned close to 80,000 acres of land causing a tangible damage of approximately two million dollars. Pine, spruce and fir are the main timber types destroyed. The damage to important watersheds is beyond measure.

Only cheering note in a bad fire picture is the report that no new fires have started.

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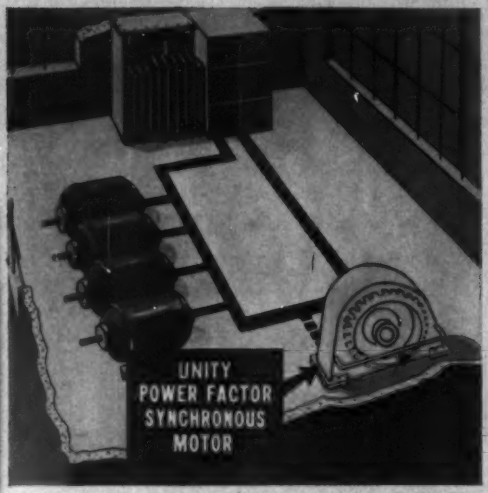

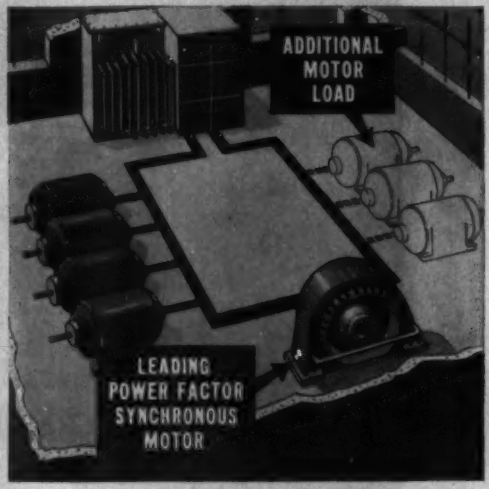

If your plant power system is loaded close to full capacity and you have a place where a large constant-speed motor can be used, you may be able to install a *unity power-factor* synchronous motor without increasing the kva load on your system.

Or, if your power system is already overloaded, then a *leading power-factor* synchronous motor can actually supply kvars to your system while performing its usual drive duties. Then you can often install additional inductive apparatus to an existing system without fear of overloading feeder lines.

If you are planning plant expansion or you need more motors and/or suspect power system overloading, contact the nearest G-E sales engineer. He'll help you survey your system, and help you determine the type of synchronous motor you need—should this be one answer to your power system problems. *General Electric Company, Schenectady, N.Y.*

NEW! A Helpful Training Course on Motors!

Everyone concerned with technical training problems will want this new G-E Motor Selection and Application Course. Consists of 9 short, easily understood lessons. Complete kit—slide films, review booklets and instructor's manual—$100. Call or write your nearest G-E sales office, or send for free copy of 96-page instructor's manual.

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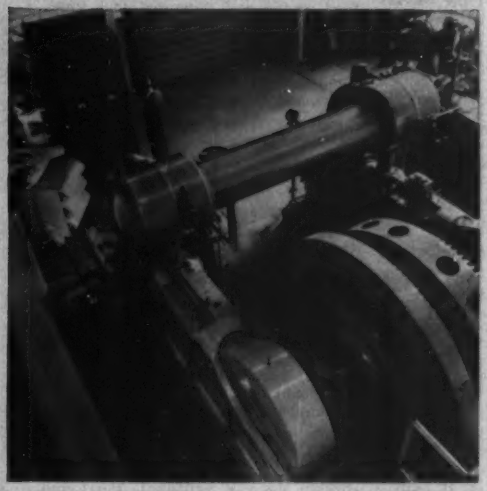

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Check power factor on individual circuits—easily, quickly—with new G-E hook-on power-factor meter. This portable instrument hooks around the line—no cutting of conductors, no costly shutdowns to make power checks. You can accurately locate those circuits where corrective action is needed.

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GOVERNMENT GOSPEL

ECA Authorizations

WASHINGTON, D. C. — Newsprint, paper-making machinery, and related items, bulked heavily in ECA procurement authorizations for foreign shipment this week.

Among outstanding items reported by the agency were $400,000 for newsprint from this country and Canada, for Turkey; sulphate pulp, and, or Kraft paper and bags, $1 million for Germany; pulp, paper or paper products, except newsprint, $85,000 from this country, Canada and Venezuela, for Greece; same, totaling $4,002,000, from this country and Canada, for Italy.

Commodities for ECA project for construction of wood pulp & paper mill at Cacia for Companhia Portuguesa de Celulose, $140,000; to be obtained in this country.

A plant and related facilities for Formosa, $70,000; and paper and related products for the Philippines, $697,000 from this country.

Certificate of Necessity

Cornell Wood Products, paperboard, $817,456 eligible, 50 percent certified.

Duplessis Calls Newsprint Meeting

OTTAWA—Premier Maurice Duplessis of Quebec has arranged a meeting with the newsprint manufacturers in that part of Canada. It is understood that one of the topics of discussion will be the price of newsprint. Premier Duplessis has insisted that newsprint companies should sell their products at lower prices to newspapers in Quebec since the wood they cut is on land leased from government.

Quebec's 17 newsprint companies produce an estimated 51 percent of Canada's total output.

Canadian Shipments and Inventories

OTTAWA—The latest survey by Canadian Government shows value of pulp and paper companies' shipments advanced to 140.6 in April this year compared with 140.0 in preceding month, on basis of 1947 being 100. However, value of inventories of such companies dropped slightly to 184.4 in April as against 186.5 in the preceding month, with stocks of raw materials and goods in process going down and stocks of finished products rising.

Fiber Drums to Replace Steel

WASHINGTON, D. C.—New and more drastic cuts in use of new and used steel drums will force a shift of many products to fiber drums, wooden barrels and other containers, it is indicated in an analysis of the recent NPA amendment to its Steel Shipping Drum order, M-75.

Numerous dry chemicals, pigments, dyes, and other products must be packaged in other than steel drums, beginning September 1.

Japan on Pulp-Paper Committee

The International Materials Conference reports that Japan has accepted its invitation to be represented on the Pulp-Paper Committee.

The Japanese Government has designated Takio Oda of the Ministry of International Trade and Industry, Tokyo, as its Representative. Mr. Oda is presently in Washington as Chief of the Japanese Section of the SCAP —Japanese Allocations and Procurement Mission.

This brings to fourteen the number of countries represented on the Pulp-Paper Committee. They are: Australia, Austria, Belgium, Brazil, Canada, France, the Federal Republic of Germany, Italy, Japan, Netherlands, Norway, Sweden, the United Kingdom and the United States.

Japan is also a member of the Cotton-Cotton Linters Committee.

Metal Shortage Hits Paper Production

Members of the Pulp and Paper Machinery Manufacturers Industry Advisory Committee told the NPA that their output of equipment has slowed about one-third because of metal shortages.

The industry said it has a backlog of orders for equipment of eighteen to twenty-six months.

The N. P. A. is shooting for a 10 percent increase in pulp, paper and paperboard in 1951 and 1952. This amounts to about 2,500,000 tons. This goal cannot be achieved unless the Government grants larger allotments of essential metals.

N. P. A. officials promised to investigate the situation and advised the machinery makers to file applications for aditinonal metal supplies.

Investigate Twine Prices

O.P.S. said it has 60 field agents looking into cases of ceiling price violations in the twine industry. Twine sales are being investigated in Texas, Missouri, Minnesota, Iowa and Wisconsin. Manufacturers' shipments are also being investigated in Pennsylvania, Massachusetts, Illinois and New York.

Food Carton Meeting

Members of the Special Food Carton and Paper Pail IAC have asked the N.P.A. to take steps to assure them an adequate supply of raw materials with which to meet an expected increase in consumption of their products.

Although they are able to meet virtually all needs now, industry spokesmen said the greatly increasing use of frozen foods, the exceptionally large farm and orchard crops this year, increasing military orders and the decreased use of tin can containers because of the shortage of tin all are factors which are likely to increase greatly the demand for the type of containers the food carton and paper pail industry produces.

A shortage of raw materials—pulp in particular—puts a definite limit on possible production increases, they told the NPA.

For this reason, they asked NPA to exempt them from the recent pulp order which limits users of market chemical pulp to 95 percent of their 1950 rate of use.

The committee pointed out the essentiality of the carton industry because of its close relation to the nation's food supply and suggested that some other uses of pulp are not so essential.

The committee asked NPA to study all pulp uses to determine if some could be restricted or substitute materials used.

Industry spokesmen explained that many of their own uses require solid pulp grades—grades made entirely from new pulp—because inclusion of waste paper in the pulp gives it an odor which taints food.

Most of the committee members said they are having difficulty now getting grease-proof paper because demand for this type of package has increased and manufacturers of grease-proof paper are also facing a pulp shortage.

They said they see little prospect of further conservation of pulp by their industry because lighter weight packages could not be used in many types of automatic packaging machines.

CMP Developments

WASHINGTON, D. C. — Application forms for fourth-quarter steel, copper, and aluminum allotments under CMP have been mailed to more than 50,000 manufacturers of mass-produced items containing these controlled materials, NPA announced this week.

Other recent CMP developments, preceding this action, included among others;

Expansion of authorization to eight government agencies to process applications for beginning construction, by putting such authorization under the CMP; these agencies will now have much broader approval power;

Basic CMP regulation amended to insure that manufacturers and others receiving authorized production schedules and related allotments of controlled materials may not purchase additional materials of any kind to augment their output of items for which allotments were made;

Production directives covering August and succeeding months issued to copper wire mills, limiting acceptance and monthly scheduling of orders to specified amounts of copper content;

Announcement on July 9 that outstanding orders for MRO supplies calling for delivery during current calendar quarter and bearing the rating DO-97, if placed before July 6, will have equal preference with authorized controlled materials orders, or DO-rated orders identified by allotment number or symbol.

DO Ratings To Equal CMO

To assure continuity of defense-supporting construction programs and certain other important programs, the NPA has ordered that the DO ratings previously assigned them for acquisition of materials be given equal status with authorized controlled materials orders during the current calendar quarter.

CMP Reg. 1 Amended

The NPA has strengthened the language of CMP Regulation 1 to emphasize that recipients of allotments under the Controlled Materials Plan are limited in their use of steel, copper and aluminum to the amounts authorized by their allotments.

The basic CMP regulation was amended to make it unmistakably clear that manufacturers and others who receive authorized production schedules and related allotments of controlled materials may not purchase additional materials of any kind to augment their output of items for which allotments have been made.

Section 3(c) of CMP Regulation 1, effective July 12, reads as follows:

"No person who has received an authorized production schedule shall produce more than the quantity of the particular product or products provided for in such authorized production schedule. No such person shall purchase controlled materials or products and materials other than controlled materials for fulfillment of such authorized production schedule except by use of the related allotment and DO rating."

Construction Applications

The NPA has announced that all applicants for permission to commence construction must use a new application form.

The new form is CMP-4C, a Controlled Materials Plan form that will serve both as a construction application and as an application for allotment of steel, copper and aluminum on types of construction for which allotments will be made.

It completely replaces form NPAF-24, which has been in use since mid-February, when a system of authorization was instituted to control the use of scarce materials in construction. Persons having applications pending on form NPAF-24 are being notified to fill out the new form.

Department of Commerce field offices previously authorized to process construction applications were instructed to send all pending applications to Washington immediately for processing.

Pulp-Paper Allocation

At its meeting July 9 the Committee began its examination of statistics and estimates concerning newsprint which have thus far been received in answer to its questionnaire. The Committee has set a target date of August 15 to develop recommendations on the distribution of newsprint for presentation to governments.

It will be recalled that the Committee, in planning its work, decided to divide its overall pulp-paper problem into three phases, according to priority: newsprint first, kraft pulp next and dissolving pulp last. In view of the fact that all three of these items are in the critical class, and in order to prevent any time lag after the newsprint allocation has been decided, the Committee has established a Statistical Pulp Subcommittee to begin compilation of data on kraft pulp and dissolving pulp.

Copper Distribution

Production directives covering August and succeeding months have been issued to copper wire mills, limiting acceptance and monthly scheduling of orders to specified amounts of copper content.

The production directives, sent to all producers of copper wire and cable products, were designed to achieve equitable distribution of CMP and other orders among the entire industry. This distribution will assure all mills, both large and small, of their rightful share of allowable production, NPA said.

International Materials Conference

Copper-Zinc-Lead Committee— Has requested its members to ascertain which of three methods of allocation considered by the Committee would be acceptable to their governments. Each of the three methods of distribution under consideration would give a first priority to meeting direct defense needs in full. It is anticipated that this information will be received shortly. Thereafter, the Committee will be in a position to make final recommendations to governments, possibly for the fourth quarter.

The Subcommittee on Statistics meanwhile has developed detailed procedures for implementing whichever plan of distribution may be adopted, including the statistical reporting required for effective control. Its final report is now being considered by the Committee.

Both the Subcommittee on Conservation and End Use Control and the Subcommittee on Methods of Increasing Production have made preliminary reports, based on their analysis of the information contained in the replies to questionnaires. Consideration of these reports are on the Committee's agenda.

Sulphur Committee— Is continuing its consideration of its plan for international distribution.

Cotton-Cotton Linters Committee—Has completed an interim examination of the prospective 1951-52 raw cotton situation and has agreed to defer recommendations of any kind until after the outturn of the Northern Hemisphere crop is more clearly indicated. Governments meanwhile have been requested to review their data hertofore submitted to the Committee and to make such revisions as may be necessary to bring them into line with more recent crop and economic conditions.

The Committee this week began an examination of the cotton linters positions. A special Linters Subcommittee was established to make an appraisal of the situation by examining the data in hand and considering whether further data might be required.

ALLOCATION SCHEDULE OF CRUDE SULPHUR FOR THE THIRD QUARTER OF 1951
(in 1,000 long tons)

Country (1)	Allocation (2)	Import Quota (3)	Export Quota (4)
Argentina	8.2	0.0	
Australia	31.6	31.6	
Austria	6.5	6.5	
Belgium and Luxembourg	17.8	17.7	
Brazil	13.5	13.5	
Canada[1]			
Cuba	2.9	2.9	
Finland	4.5	4.5	
France	31.2	27.7	
French North Africa	4.5	4.5	
Germany	15.1	5.1	
India	11.4	11.4	
Israel	1.0	1.0	
Italy	36.0[2]	....	17.7
Netherlands	0.6	0.5	
New Zealand	16.6	16.6	
Norway	6.3	....	18.7
South Africa	16.2	16.2	
Sweden	15.1	11.6	
Switzerland	6.8	6.8	
United Kingdom	106.3	103.0	
United States	1050.0[1]	....	250.0
Oil Refineries in Bahrein, Lebanon, Netherlands Antilles, Trinidad, Indonesia, Iran	8.5	8.5	
Other Countries	4.8	4.8	
TOTAL	1415.4	286.4	286.4

[1] The Canadian allocation is included in the United States figure in Column 2.
[2] Does not include 10,000 tons of crude sulphur to be exported as refined.

Tungsten-Molybdenum Committee—Is still considering a stop-gap distribution plan for the ores and concentrates of tungsten and molybdenum for the third quarter of 1951.

Manganese-Nickel-Cobalt Committee — Has examined the report of the Subcommittee on Distribution relating to allocation of nickel and cobalt. It was decided that the Subcommittee should give further study to the proposed distribution schemes in order to make proper adjustments concerning special cases. These schemes give first priority to direct defense requirements. Treatment to be given to stockpile and essential civilian requirements is still under consideration.

The manganese statistics have now been assembled and distributed for examination by the Subcommittee on Statistics.

Newsprint Shipments

OTTAWA—Following the rush shipment of 3,000 tons of newsprint to France just before the recent French elections, Canada will now send 2,100 tons of newsprint to Yugoslavia under the international emergency allocation of newsprint which calls for 10,000 tons to be shipped to countries close to the possible influence of Communist influence. Canada is shipping 7,400 tons of this 10,000 tons allocation.

Other shipments of newsprint by Canada under this arrangement will call for 1,600 tons to Greece, 2,500 tons to India, 700 tons to Malaya and Singapore, 500 tons to Pakistan and 2,100 tons to Yugoslavia.

It is understood that the international pulp and paper committee will shortly consider establishing a possible permanent system for allocating newsprint as an essential material in the whole defense program.

FINANCIAL

Sorg Paper Co. reports net earnings during the three months ended March 31, after taxes, were $235,177, equal to $1.19 a share, and compare with $201,766, or a $1 a share, in the comparable period of 1950.

Mead Corp. and subsidiaries report for twelve weeks ended June 17:

	12 Wks. End June 17, '51	12 Wks. End June 11, '50
*Earned per common share	$1.32	‡$1.15
Net sales	26,252,626	19,970,752
†Net profit	1,495,636	1,333,007

* After preferred dividend requirements.
† After charges and federal income and excess profits taxes.
‡ Based on present number of common shares outstanding.

Canada Foils Ltd. has declared a dividend of 10c on common and another dividend of 15c on Class A, both payable August 15 to stockholders of record July 27.

Champion Paper & Fibre Co. has made application to the New York Stock Exchange to list 1,102,000 additional shares of common stock. These shares are to be distributed to present stockholders if they approve an increase in the authorized common stock to 3,024,000 shares from the present 1,512,000, at the annual meeting July 25. The increase is to permit a two-for-one split.

Champion Paper and Fibre Co. is almost a $100 million concern, according to its annual report covering the year ending March 31, 1951.

Total assets of the company—which has major plants in Canton, Hamilton and Houston, Texas—are $93,139,176 representing an $11,943,186 increase over the preceding accounting year.

Net income for the year's operations totalled $10,590,800 compared with $8,765,917 in the previous year.

This year's net income was added to the April 1, 1950 balance for a total of $48,751,377. From this was deducted $450,021 distributed to preferred stockholders; $2,975,400 for common stockholders; and $25,023,750 as an appropriation to increase the capital assigned to the stated value of common stock.

These deductions left the company with a March 31, 1951 balance of $20,302,206 as earnings retained in the company.

The paper company earmarked $11,780,000 to pay its income and excess profits taxes. This compared with $5,080,000 for the previous year.

Oxford Paper Co. proposes to split its common stock two-for-one. Stockholders will vote at a special meeting, called for July 23 on the directors' proposal to change the present 400,000 authorized no-par common shares, of which 380,735 are outstanding, to a like number of $15-par shares and to increase authorized number of new $15-par shares from 400,000 to 800,000. If the vote is favorable, directors would then declare a 100 percent stock dividend, increasing outstanding common shares to 761,470. Stockholders will also vote on approving a pension plan for employes.

Heyden Chemical Corp. declared a dividend of 25 cents per common share payable September 1 to stockholders of record August 10. This brings the total payment in 1951 to 70 cents per common share.

Nekoosa-Edwards Paper Co. is considering a proposed employees' stock option plan, and a proposition authorizing an issue of bonds in the amount of $5,100,000. Of this amount, $2,100,000 will be used to retire the company's present total bonded indebtedness. The remaining $3 million will aid the company in the improvement, expansion and modernization of its plants at Port Edwards and Nekoosa under the program launched last October.

Canadian Wallpaper Manufacturers Ltd. report operating profit for the fiscal year ended April 30, 1951, increased to $735,100 as compared with $581,050 for the preceding fiscal year, with the net profit rising to $235,345 as against $166,095. Other disclosures showed per share $1.82 in 1951 fiscal year against $1.28 in preceding year; current assets, $3,188,463 against $2,722,550; current liabilities, $747,829 against $717,640; working capital, $2,440,634 against $2,004,910; inventory, $1,606,817 against $1,446,118.

St. Lawrence Corp. reports that another 8,199 first preferred shares have been surrendered for exchange into 16,398 common shares, making 90,455 first preferred and 930,485 common shares outstanding.

FIBERBOARD PRODUCTS CONSOLIDATED INCOME STATEMENT FOR THE YEARS ENDED APRIL 30	1951	1950
GROSS SALES, Less Returns, Allowances, Discounts and Freight	$83,313,267	$55,320,494
COST OF GOODS SOLD	62,445,189	45,021,469
GROSS PROFIT ON SALES	20,868,078	10,299,025
Deduct:		
Selling Expenses	1,676,031	1,561,315
General and Administrative Expenses	2,441,810	1,877,898
Total	4,117,841	3,439,213
PROFIT FROM OPERATIONS	16,750,237	6,859,812
OTHER INCOME (interest, purchase discount, etc.)	270,542	203,704
GROSS INCOME	17,020,779	7,063,516
INCOME CHARGES:		
Interest	876,372	890,593
Pre-operating Expenses of New Plants		518,459
Miscellaneous	77,460	37,097
Total	953,832	1,446,149
NET INCOME BEFORE PROVISION FOR FEDERAL TAXES ON INCOME	16,066,947	5,617,367
PROVISION FOR FEDERAL TAXES ON INCOME (1951 including $1,878,000 for excess profits tax)	8,837,000	2,156,703
NET INCOME	7,229,947	3,460,664
EARNED SURPLUS AT BEGINNING OF YEAR	13,146,201	10,665,074
Surplus Credit—Reserve for pre-operating expenses restored to surplus		275,000
Total	20,376,148	14,400,738
Dividends Paid:		
Prior Preferred 6% Cumulative	72,888	72,888
Preferred 7% Cumulative	1,181,649	1,181,649
Total	1,254,537	1,254,537
EARNED SURPLUS AT END OF YEAR	19,121,611	13,146,201

Illustration from the Bettmann Archive

Paperboard Salesman—Model 1810

The French, mindful of their finery, were the first to fashion sturdy boxes of paperboard for ladies' and gentlemen's hats. Built up by hand from multiple layers of paper, the board was shaped and moulded into boxes, some of them finished with a plain glazed surface, some with decorations. Then the salesman with his loaded display of paperboard boxes would call his wares through the streets of Paris.

Hat boxes, not much changed in design after 140 years, are still widely used for millinery and men's hats. But the once precious paperboard, now produced by modern high-speed methods, low in cost and plentiful, today protects just about every commodity used by business and the home. For packaging, for shipping, for sanitary protection, for display, for convenience, paperboard cartons and containers are the indispensable carriers of modern merchandise. No wonder paperboard accounts for nearly one-half the total production of the American pulp and paper industry.

The dramatic story of paper is told in the sound-and-color film, "Paper — Pacemaker of Progress," and in a book under the same title. Both are presented by F. C. Huyck & Sons as a tribute to the Paper Industry. The book will be sent free upon request.

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Accounting for Supplementary Costs of Labor*

Ralph B. Knott

Vice President in charge of Finance, Fiberboard Products, Inc., San Francisco, Calif.

Supplementary costs of labor! What do you know about them? How much are they costing your company? Just what do you consider when answering "Yes, I know my labor costs." Have you really made a study of your facts and pulled together all of the hidden supplementary costs of labor buried deep in overhead accounts? Have you tabulated them and analyzed the data to be sure all the fringes are exposed? You will need this vital information in future dealings and for negotiations with your labor unions.

Current Recognition of "Hidden" Labor Costs

The Wage Stabilization Board under its Regulation No. 6 points up this matter of fringe benefits. I quote from Section 3, Paragraph E — Other Compensation:

"Increases in other compensation to be considered for the purpose of applying the policy herein set forth are prorated changes in compensation benefits such as night shift bonuses, overtime premium rates, vacation, holiday and like allowances, pensions and insurance, and health and welfare benefits paid by employers, or contributions of employers on account thereof."

Thus official recognition is given to these supplemental costs of labor by their inclusion under General Wage Stabilization Regulation No. 6.

We on the West Coast have fully recognized the impact of these costs on business as last fall at the N.A.C.A. Western Regional Cost Conference held in Portland, Oregon, we spent one Saturday morning discussing this problem. Again in April the San Francisco Chapter had the pleasure of listening to a discussion presented by Clause R. Groth, assistant treasurer of the Pacific Power & Light Co., on "Cost Control of Employees' Welfare and Benefits."

The significance of this problem is also shown by the many comprehensive studies which have been released on a national scale. The United States Steel Co. in its 1950 annual report to their stockholders stated, on page 23:

"Few people are aware of the full extent of the increase since the 1930's in the cost of an hour's work. The reason is that in wage rate compilations there is general failure to include with the basic straight time wage rates numerous items of so-called "fringe" employment cost. The full cost of an hour's work to an employer includes not only the straight time rate for time worked, but many other costs that have been advancing rapidly in the past fifteen years. Such other costs include: Overtime, holiday and shift premiums; vacation costs; pension and insurance costs; welfare fund payments; government old age and unemployment benefit taxes, workmen's compensation payments; accident and hospital expense; reporting time and other allowances; and, in certain mining operations, portal-to-portal paymetns. These "fringe" items have exactly the same effect upon production costs and selling prices as though they were straight time wages. The cost per employee of these "fringe" items to U. S. Steel in 1950 averaged about 34 cents an hour or 21 percent of the straight time hourly wage. The straight time hourly wage of U. S. Steel's average steel mill worker for 1950 was nearly 1½ times the rate paid in 1936, but the "fringe" costs were eight times as great."

For another instance, the Chamber of Commerce of the United States of America, in a research study prepared by its economic research department on wage supplements for 690 companies in 1949, found that the percent of nonwage payments by industries to payroll varied from 9.4 percent to 24 percent. Again the U. S. Department of Commerce found in one of its studies that contributions for supplements to wages and salaries varied greatly by industry. This study in 1949 showed ranges from .3 percent in agriculture to 22.9 percent in the petroleum products industry.

George A. Lahusen of the Crown Zellerbach Corp. presented some very informative data at the West Coast Regional Conference. These data pointed up the fact that costs which are hidden are often highly important. I quote excerpts from his paper.

"H. W. Heinrich, whose book 'Industrial Accident Prevention' is used as a bible by the safety engineers, made an exhaustive research on the hidden or indirect cost of accidents. He found, and it has been substantiated by many others . . . that the incidental or hidden cost is *four times* as *great* as compensation and medical expense. This four to one ratio has been challenged many times but has always survived the challenge. We have so many examples of accidents where the hidden costs are far in excess of the compensation premium costs that we are convinced that this ratio is true in the over-all picture.

"Here is an example of what I mean. We had a boy get his foot caught under the winder drum of our No. 9 machine. He could not get it out and it was necessary to shut the machine down for 2 hours and 20 minutes while the drum was being raised. This machine makes a sheet of paper 13 feet wide and a mile long every 4 minutes . . . we lost the production for 160 minutes. The total compensation amounted to $19.43 . . . the hidden costs amounted to many times more than the 4-1 ratio because we lost 15 tons production on this machine.

"About a year ago we had a break in a chlorine line . . . 10 people were overcome and many more received first aid treatment. This accident shut the mill down for several hours and we lost the production from 10 paper machines and loss of work of several hundreds of people because their wages were paid during that time . . . yet the total cost of compensation paid out to those 10 persons only amounted to $137.68. We could cite many cases where the ratio of 4 to 1 is extremely low . . . to be sure there are many cases where an employee is injured and no loss of production occurs, yet there is always some hidden cost involved in every accident."

Labor Segments; "Payroll Expenses"; Labor-Source Burden

We could quote additional data on the same subject but, unfortunately, it might result in comparing peaches and olives, as a basic set of ground rules has not as yet been applied to those studies which have been made. In other words, is the fringe applied to briefs or full length panties, and is it

*Presented June 27, 1951, to the Thirty-Second Annual International Cost Conference of the National Assn. of Cost Accountants.

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rick rack or expensive battenberg which shows? Perhaps, in order to save time, we should try to develop and classify into categories a few of the more significant facts and items to be considered in this presentation.

First let us look at items which we choose to classify as *segments* of direct or indirect labor costs. In our company we are fortunate enough not to have to recognize all of these items but, for the record, we feel that they should be mentioned. The major items under this category would include the following:

1. Straight time pay for hours worked.
2. Retroactive pay adjustments.
3. Separation or termination pay.
4. Call time regardless of actual hours worked.
5. Overtime premium payments or amount paid in excess of base rates.
6. Shift differentials for night and swing shifts.
7. Premium pay based on bonus or incentive wage payment plans.
8. Guaranteed minimums in excess of normal rate under piecework or incentive plans.
9. Pay of trainees and apprentices in excess of normal for their production actually attained or, in other words, base rate guarantees.
10. Lunch periods when eaten on the fly.
11. Rest periods.
12. Wash up and change of clothes time.
13. Travel time or portal to portal pay.
14. Waiting for work or stand-by time.

Secondly, let us look at items which we consider as *payroll expenses*. The term used in other companies could be entirely different. In our cost accounting practice these fringe items are used as common costs between work or cost centers and are distributed on the basis of the salary or payroll dollar. We include in this classification the following:

1. Retirement and pension payments for both federal old age benefits and the company contribution to its retirement plan.
2. Unemployment compensation for both federal and state plans.
3. Paid vacations or payments in lieu of vacation taken.
4. Paid holidays taken.
5. Medical aid in states where applicable.
6. Workmen's compensation which includes the estimated cost of a self-insurance plan in states where applicable.
7. Company payments for group life insurance.

Third, let us just list a group of items which are definitely a part of the cost of operations but which we do not classify as labor or labor costs (probably they would be considered mainly as overhead items). In other words, these are hidden payroll costs which might be called *employee benefits* or costs which would not be incurred during normal business operations except for employees and public relations. In this group might be considered:

1. Purchase of uniforms, work clothes, and safety appliances.
2. Subsidizing meals during working hours.
3. All phases of general medical care, including special dispensary operations, with doctors, dentists and nurses at the plants.
4. House organs or employee magazines.
5. Length of service awards, in the form of pins, rings, watches, or what have you.
6. Time spent assisting employees with their income taxes and other services rendered to employees.
7. Repayment or advancing fees for tuition in correspondence schools or night extension classes.
8. Special allowances for payments for time lost due to voting time, jury or witness duty, national guard or military encampment duty, accidents, death in the family or other personal reasons, time spent in behalf of union activities or credit unions.
9. Special awards or payments ordered by the courts.
10. Payments arising from labor disputes.
11. Gifts and donations to employees and their families.
12. Discount on goods and services purchased from or through the company.
13. Social, athletic clubs and recreational activities.
14. Awards for suggestions.
15. Net cost of operating company homes or commissary, towns, etc.
16. Contributions and donations to prevent plant solicitation of employees.
17. Dues and membership in technical and trade associations.
18. Coffee habits, cafeterias, special lounges, music, etc.
19. Training courses and text books given in conjunction therewith.

I do not imagine for one minute that I have exhausted the list, as many of the items mentioned could be broadened and even broken down into finer units. However, for our purposes, I believe the major items, at least, have been placed in their appropriate classifications.

The next step, before we embark upon a detailed accounting discussion, would probably be to indicate the exposure of our company to the problems to be discussed. Fibreboard Products, Inc., and its seven subsidiary companies have about 6,000 employees. If we exclude approximately 1,300 office, technical, and some isolated employees, about 78 percent of the remainder are represented by eleven major unions in thirty-nine separate plant locations. In our opinion, this represents a good cross section of management-labor relationships and their problems facing business executives today.

It is probable that one of the most common interests of the group to whom this talk is addressed, in relation to supplemental cost of labor, would center in the second of the three foregoing groups of labor "fringe" costs, that are identified as the category of payroll expenses. This problem becomes more acute as the ramifications contained within the subject are analyzed and studied. However, one approach in presenting the subject would be by the use of the case study method. In the following discussion, I will refer to "standards," "budgets," and "actuals" because we operate under a standard cost system, but let me emphasize that the method of relating additional employment costs to payroll dollars to develop total labor cost is the same whether you use a standard, actual, or a job order cost system. Therefore, I would like to offer for discussion the manner in which Fibreboard Products, Inc., handles these costs as one way of accounting for supplemental costs of labor.

The Broad Fringe—Pension Plans

However, before we bring the discussion down to a specific set of problems at Fibreboard, it may be well to review first, in a broad sense, one of the major elements of supplemental payroll costs. It has been listed first among payroll expenses above. I have in mind the big subject of pensions and pension plans. This is becoming a more and more important item of costs to many of us. Furthermore, the labor unions are using pensions as a big stick to wield during most labor negotiations. The astute business executive today must have a keen sense of this problem and a very definite understanding of how these commitments are increasing his obligations and the costs of his doing business.

All employers, whether large corporations or small companies, are ultimately faced with the problem of what to do with superannuated employees. There are three obvious methods of meeting the problem:

1. All employees can be kept on the payroll until they are no longer able to perform any work. While this was the practice some years back—and it might be kindly practice—it is extremely costly because, under today's business conditions requiring high pressure work and efficiency, the old employees cannot keep up the pace. In fact, the pressure might be too much for the older employees and for that reason it might not be the "kindly practice." There are, of course, exceptions where the employee has special qualifications. With the loss of efficiency in the superannuated employees there is also a loss of efficiency in the younger employees because promotions occur only upon total and permanent disability or death. The result is either a loss of interest or a loss of the services of employees with ambition.

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2. The employers could adopt a program of terminating, without further compensation, all employees upon attainment of a predetermined retirement age. In fact, it would not be necessary to have any fixed age at which termination would be made. Many employers have had this program but present thinking is certainly not along these lines and an employer with such a program today is a candidate for serious labor problems and poor public relations.

3. The most equitable and soundest means of providing for the superannuated employee is to adopt a formal program of retirement and to fund the cost as it accrues. By this means the employees are aware in advance what to look forward to at their retirement.

The cost of providing retirement income to superannuated employees should be spread over the balance of the work life of the employees by an orderly formal funded plan, thereby absorbing the cost during the period in which such expense is incurred. This expense can be compared to depreciation on buildings and equipment. If reserves are set aside for the depreciation of buildings and equipment, should not the same practice be adopted for manpower? Each is equally important and necessary to the operation of a business and each must ultimately be replaced. The day is long gone, if it ever actually existed, when manpower can be discarded without any consideration because it is worn out.

There are several sound means of providing funds for the retirement income of superannuated employees:

a. Upon an actuarial determination of the cost of a retirement plan, the funds may be paid into a trust fund. Then these can be paid out of this trust fund directly to the retired employee by the employer himself through a self-administered retirement plan, or

b. The company may at the time of retirement purchase with the funds of the trust, annuities from an insurance company which in turn would pay the retirement income to the retired employee, or

c. The employer may purchase annuities directly from an insurance company as they accrue. Under either method (b) or (c), such funds may be accrued on a level premium basis or on a single premium basis. On the single premium basis the cost increases each year as the age of the employee increases, whereas on the level premium basis, the entire cost of providing the pension for each employee is determined and this cost is spread evenly over the work life of each such employee. At any event, the cost is reflected at the time the expense is incurred.

Many employers, having adopted unfunded informal plans, have suddenly found that the liability assumed is outside the bounds of sound business practice. The danger of an unfunded and uninsured pension plan is that, as the company grows older, the number of superannuated employees increases. With such plans usually go a complete lack of knowledge of the extent of the liability that the company has assumed. The usual procedure is to pay to each retired employee a portion of his earnings after retirement and take such payments as tax deductions as they are made. No consideration is given to the total which will have to be paid to each such retired employee nor the total payments which the company will be liable for on all of the annuitants, present and future. Nor is any consideration usually given to the ability of the company to meet these liabilities during periods of business recession or depression, or how and where the funds are coming from.

Since the provision of retirement income for superannuated employees and formal retirement plans are a part of every day business expense, their costs should be reflected currently and absorbed in the year they are incurred. Furthermore, if this practice is followed, the funds are available when needed. Hence the pension cost is met through profits directly related to production costs.

The Seven Categories of Payroll Expense at Fibreboard

It is now in order to go forward to the previously announced case study of Fibreboard Products in relation to the seven items of payroll expense already enumerated. The first of these, just discussed in general terms, is pensions and leads to description of our self-administered trusteed contributory retirement plan.

1. *Pension Plan* — A complete set of accounting records is maintained in our insurance department, including individual records for each participating employee. The trustee submits an annual report covering the year's activity on the funds in the trust. Such items as yield from investments in stocks and bonds purchased and sold and remaining funds, of course, are included in this report. The retirement plan committee reports in detail on activity under the plan. Naturally the retirement plan accounts are audited and approved by independent certified public accountants, who submit their report to the retirement plan committee and the board of directors of the company.

The costs of administering the plan are borne entirely by the company. Such charges as trustee's fees, auditors' fees and actuarial fees are paid by the company and again add to the total of hidden supplemental costs of labor. There is an actuarial evaluation made annually by an independent actuarial firm to determine the amount the company should pay into the trust to provide past-service and current-service benefits under the plan. At the inception of the plan in 1945, the past-service benefits were evaluated and, in accordance with the internal revenue department's requirements, this expense is being amortized over a ten-year period. It is necessary, however, to evaluate this cost annually, due to terminations of employment, retirements, deaths, interest earned, etc.

We prorate pension costs on a basis of the covered payroll dollars. Our first major division is between selling and general administrative expense and manufacturing expense. Then the manufacturing expense is distributed by plant on the basis of the covered payroll at each plant location. Within the plant, this expense follows the total labor dollar as a part of the proration of our standard payroll expense.

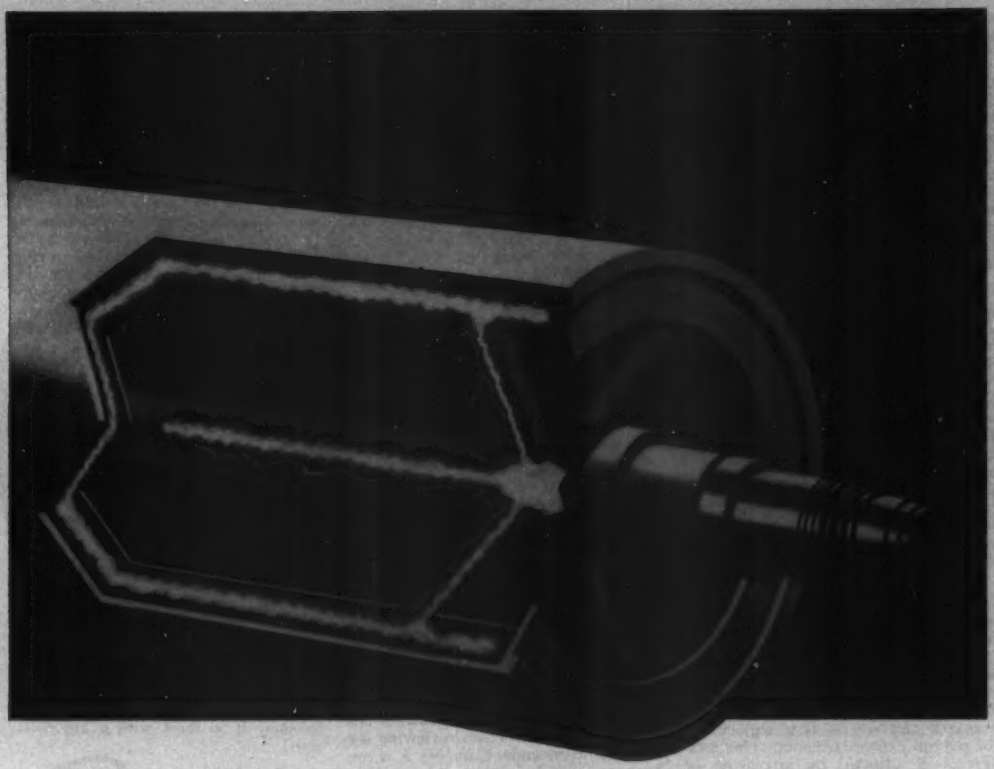
2. *Old Age Benefits and Unemployment Taxes*—We are no different than other companies in regard to these items. However, it may be interesting to know how we accrue this expense and apply it to our operations.

Annually, as part of our budget for operations, we set up the anticipated costs for each item. This is necessary because rates for each are different and the base taxable pay is also set at different annual amounts. By estimating the year's payroll and, for example, providing for increases in direct labor base pay, we can approximate how much will be paid to employees whose earnings do not exceed the established taxable amount and for those who will have exempt wages. By calculation, then, we can approximate the total annual charges for these costs. This amount is used for our standard payroll expenses which we will discuss subsequently.

3. *Vacations*—The expenses for vacations are continuing to amount. At our recent wage negotiations with two of the major unions, we again granted an increase to our employees for vacations. We had been operating under an agreement which provided for one week's vacation after one year's service and two weeks after five years. The new agreement now provides for one week after one year and two weeks after three years of service. Thus, the company liability is increased considerably, as well as costs, because this item is charged to operations and products.

It is our plan to control this expense through the personnel department at each operating location. These departments know who is eligible for a vacation and from their records can approximate the total liability created by the union agreement. Annually, when the budget is prepared, the plant personnel department will give to the office manager an estimate of the annual cost for vacations.

4. *Holiday Pay* — Our union agreements spell out the provision for this item. In translating this into terms of cost for the budget, we make up an analysis of the payroll by base rate brackets. Then we multiply the number of eligible employees in each bracket by the hourly rate times eight to cover a standard working day and finally by the agreed number of holidays. The net result is the approxi-



Double-Shell Construction
Assures More Time on Production

Are down-time bandits on your dry end "holding up" production schedules? Then consider the advantages in Lukenweld Jacketed Steel Drier Rolls.

For the double-shell steel plate design of Lukenweld driers permits a speedier return to production. Since these rolls restrict steam to a shallow annular jacket, heat-up is faster—reducing start-up time. Less steam is required for heat-up. Pressure variations are reflected sooner. Operation is much more flexible.

And less down-time is required for maintenance. The syphon pipe, welded in a fixed position, revolves with the roll. So it requires little attention . . . is *virtually maintenance-free.* Condensate is drained with every revolution, preventing the risk of inadequate condensate removal which can result from faulty assembly or alignment. It can be designed to operate with equal efficiency at any speed.

Specify Lukenweld Jacketed Drier Rolls for a bonus in productivity . . . an increase in drying rates up to 50% and more. Jacketed Steel construction assures safe operation at pressures as high as 350 psi.

For engineering assistance on drying problems, write Lukenweld, Division of Lukens Steel Company, 403 Lukens Building, Coatesville, Pa.

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mate annual cost of holiday pay to be budgeted.

5. *Medical Aid* — (Locations outside California) — In the states outside of California we are subject to this item. It covers the cost of doctor bills and medical supplies for employees injured on the job. The cost is based on the number of man hours worked at a rate as established by the particular state or insurance company covering the risk. The total annual expense is estimated and is included with the other payroll expenses.

6. *Workmen's Compensation Insurance*—We are self-insured in the State of California. Our plan of operation is to maintain a separate set of books in the insurance department to cover these costs. The control account from this set of books ties into a reserve account on the general ledger of the company. To offset this reserve, we have investments in securities to assure liquid means to provide for any payments which may arise. In the case of a catastrophe, we have overriding insurance with an outside insurance company to protect against such a contingency.

In respect to the charges to plants and cost centers, we do not attempt to apply occupational classifications, for example, by the state manual rates, to the covered payroll by risk. It is our practice to determine a year in advance the total anticipated coverage. This is included when the budgets are prepared and set up as a segment of the payroll expense account. This total accrual is adjusted by increasing or decreasing the annual rate base on the loss experience of each plant for the year. In this manner a plant which has an excellent accident record would receive a correspondingly low charge for workmen's compensation insurance cost. For example, this is demonstrated by the outstanding record of the employees of our South Gate, California, plant. This plant operated a total of 1,043 days, from August 9, 1947, to June 17, 1950, without any disabling injuries. Therefore, they would be charged with only the minimum amount of cost for workmen's compensation insurance. The rate this year for South Gate is 25 cents per $100 of payroll while, for example, our Vernon plant only three miles from there has a rate of 69 cents. These compare with a rate of over $4 for our hazardous logging and woods operations.

7. *Group Life Insurance* — The company offers group life insurance to its employees after they have been on the payroll over sixty days. The average rate per thousand is determined by the insurance company and each plant is charged in its standard payroll expense account for the difference between the total cost of the life insurance on covered employees and the contributions received from these employees. The company pays all the costs in excess of the employees' contributions.

Accounting Procedure for Payroll Expenses

The seven categories of supplemental costs of labor just discussed cover the items classified as standard payroll expenses under our cost accounting system. In the discussion of each item, the method of determining annual costs has been explained. The next step, therefore, would be the summarization of these costs and their distribution from clearing accounts to cost center or department accounts and finally into product costs.

Control of Burden Costs

It might be well to discuss for just a few minutes some of the items in our third major category of costs set forth earlier that of overhead costs and probably it would again be well to roughly point out the methods used at Fibreboard, as a springboard for discussing these items.

It is our policy to charge expenses to the lowest level of cost control possible. For example, we have a carton department, so called, within which are innumerable finishing operations and machines. Our lowest level here for items in Category 3 would be the carton department overhead account rather than each individual unit comprising the make-up of the department. The superintendent responsible for the carton department is, of course, held accountable for all expenses within his operations. Therefore, in reviewing the nineteen items under Category 3, it can be understood just where the breaking point comes in the overhead department class.

The next step above a major departmental overhead account would be the plant general manufacturing overhead account. Into this cost control, all expenses applicable to the plant as a unit would find their way. Items which affect more than one cost center at a particular plant would be charged to these accounts.

The final step would be the handling of items on a company-wide basis. In this case the charges would be made to the general administrative account. Here they would also follow the functional departmental line of the staff departments involved, as for example, public and industrial relations, contract or legal operations, production administration, research or similar staff functions.

In a nutshell, we attempt to hold the individual responsible for costs incurred. If he has the power to authorize the expenditure of funds, then he must accept the charges made for the activity involved as part of his cost of operation. In the preparation of budgets for cost centers, these items are fully discussed and the supervisor or key executive knows the detail of all charges made to his cost responsibility.

A Subject Without End

Many hours could be spent in discussing individual overhead items, such as cafeteria operations and the good old American custom of coffee hours. Also a lot of the other items we have enumerated under the classification of supplemental costs of labor would stand further discussion. However, I know you all are looking forward to the panel discussion and possibly obtaining an answer to a question which has been bothering you. Therefore, in closing, I only hope that in this discussion you have obtained the feeling that the problem of fringe benefits is a big one. Each time I review the data on the subject I become more and more convinced that all of us should explore the field and endeavor to establish accounting techniques to bring together the many facets to the problem. We are just starting to feel the impact which is bound to develop as the labor unions wield this club.

Do all of you know what these items are costing you? If not, may I suggest that, when you return to your office, you start to check off and tabulate these costs. I guarantee you will start for the box of aspirin to ease the headache you have been developing. Furthermore, in my opinion, the management of the companies in this country should inaugurate a campaign to educate their employees as to just how lucky they are in the exquisite battenberg they have for their fringes. Let us show it to them with a big dollar sign!

OMISSION

The article entitled "Quality Control as an Aid in the Manufacture of Glassine," by Donald Newcomb, was originally presented at the Spring Meeting of the Pennsylvania-New Jersey-Delaware Section of the American Pulp and Paper Mill Superintendents Assn at Hotel Easton, Easton, Pa. This information was omitted when the article was published in our issue of July 6, 1951.

SCRUB OAK PROJECT

The project of pulping scrub oak started by the University of Florida, got underway at the Herty Foundation, Savannah, Ga. Florida and Georgia are cooperating in this work.

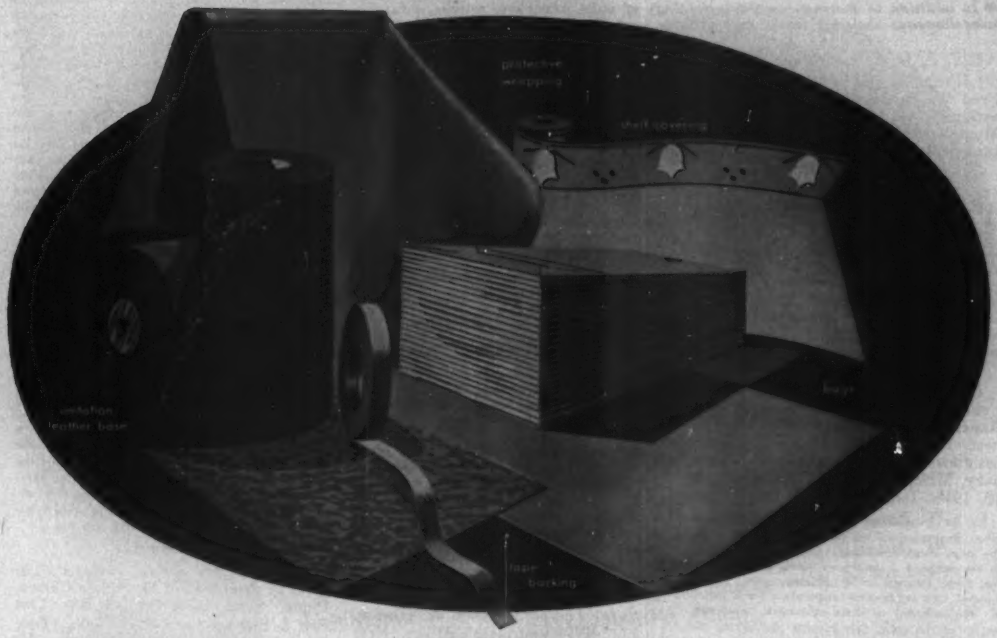
The first tests were concluded satisfactorily and further experiments are planned. It is hoped that full scale tests will be possible with this more or less useless wood.

Even if the wood will make a satisfactory pulp, many problems such as harvesting, proper utilization of the land and soil erosion, remain to be solved.

News about

B. F. Goodrich Chemical Company

raw materials



Paper takes on new jobs

—WHEN IT'S HYCAR-IMPROVED!

TO convert paper to new uses—improve it, too—put Hycar on the job. Paper impregnated with Hycar latex becomes softer yet stronger—makes smooth-draping sheets. It gets a cloth-like feel. Tear and wet strength, and resistance to absorption are improved.

See how many uses there are for Hycar-improved paper!—protective wrapping, bags, gasketing, tape backing, imitation leather base, shelf covering. More uses are possible.

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Hycar latex has other valuable uses: for modifying other resins; for making phenolics tough rather than brittle. It is non-migrating and non-volatile, ideal for permanently plasticizing vinyl resins.

Hycar-based adhesives can permanently bond paper, wood, leather, aluminum foil and vinyl films to themselves as well as to other materials.

Present demand for Hycar materials exceeds supply. But limited quantities are available for development work. For technical bulletins, please write Dept. HJ-8, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco.

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Patent Abstracts

● *In addition to abstracts on the technology of pulp, paper and related industries, miscellaneous abstracts which may provide useful information are included.*

U.S. 2,553,592 — Coating Apparatus for Wrapping and Cartoning Machines. Fred W. Kucklinsky, Montclair, N. J., assignor to Esther M. Kucklinsky, Montclair, N. J. Filed March 19, 1947—Issued May 22, 1951.

A coating substance applicator roller comprising a body formed to provide an internal coating substance reservoir chamber, said roller having a peripheral portion surrounding said reservoir chamber formed by an assembly of annular plates in face to face abutment transverse to the roller axis, and said plates having open ended radial channels in faces thereof extending from their internal to their external edges through which the coating substance contained in the reservoir chamber exudes without obstruction of flow to the peripheral surface of the roller.

U.S. 2,553,725—Process of Preparing Cellulose Derivatives. Linwood N. Rogers, William A. Mueller, and Ernest E. Hembree, Memphis, Tenn., assignors to Buckeye Cotton Oil Company, Memphis, Tenn. Filed September 10, 1948—Issued May 22, 1951.

In the process of preparing salts of acidic ether derivatives of cellulose from cellulose pulp, the steps which comprise (1) contacting the pulp in the form of a continuous sheet, while feeding the sheet through a hydrolyzing zone, with a mineral acid at elevated temperature for a period of time sufficient to effect substantial depolymerization of the pulp, (2) washing and drying the sheet while feeding the sheet through an acid removal zone, and (3) impregnating the sheet, while feeding the sheet through an etherifying zone, with an aqueous solution of a halogenated acid of the group consisting of halogenated aliphatic carboxylic and halogenated alkyl sulfonic acids having not more than 4 carbon atoms in the molecule and an alkaline agent in total amount not greater than that which the sheet is capable of absorbing.

U.S. 2,553,733—Machine for Setting Up Corner Locking Trays. Ralph E. Acker, Fort Worth, Tex., assignor to Container Corporation of America, Chicago, Ill. Filed February 20, 1948—Issued May 22, 1951.

In a machine for setting up a rectangular container from a flat paper board blank having a bottom panel and contiguous end and side walls with the end walls having contiguous locking tabs at the corners between the same and the side walls and the side walls having contiguous end flaps around the locking tabs, in combination, a rectangular throat having an opening of slightly greater cross-sectional area than said bottom panel with its sides higher than its ends, folding elements at the corners of said throat extending above its sides for initially receiving said blank thereon and engaging said locking tabs and end flaps, each folding element having a projection at its inner side positioned in a plane parallel to the adjacent side of said throat and spaced inwardly therefrom to engage the adjacent locking tab and direct said tab along the inside of the adjacent side wall, and a rectangular plunger movable into said throat and arranged to engage said bottom panel to move the same into said throat whereby said folding elements first cause said locking tabs and end flaps to swing relative to their end and side walls, then said sides of said throat cause said side walls to swing to a perpendicular position relative to said bottom panel, and finally said ends of said throat cause said end walls to swing to a perpendicular position relative to said bottom panel carrying therewith said locking tabs and said end flaps and moving the former into locking engagement with the latter.

U.S. 2,553,740—Machine for Covering Knocked Down Cartons. Samuel Bergstein, Cincinnati, Ohio. Filed August 31, 1946—Issued May 22, 1951.

In a machine of the character described, a pair of rolls juxtaposed and forming a pinch, means to feed a sheet of material to a position in a plane adjacent said rolls and substantially parallel with the plane containing the axes of said rolls, and means for feeding a tubed carton into the pinch of said rolls through the plane occupied by said sheet whereby to carry said sheet through the pinch of said rolls and wrap it about side portions of said tubed carton with one end projecting, means to turn said partially wrapped carton through an arc, means for sweeping back said projecting portion of said sheet as said carton is so moved, and a second pair of pinch rolls through which said carton is next sent to press said projecting portion of said sheet against said carton and lap it over the opposite edge portion of said sheet.

U.S. 2,553,767—Method of Separating Chlorine and Sulfur Dioxide from Mixtures Thereof. Arthur W. Hixson, Leonia, N. J., and Ralph Miller, New York, N. Y., assignors to The Chemical Foundation, Incorporated. Filed October 1, 1946—Issued May 22, 1951.

A method of separating sulphur dioxide and chlorine from a gaseous mixture of these components which comprises, contacting the mixture with solid aluminum chloride under conditions regulated to effect the formation of an addition compound of the chloride and sulphur dioxide and recovering chlorine substantially free from sulphur dioxide.

U.S. 2,553,870—Box Blank and Box. Rolf A. Samsing, Dorchester, Mass., assignor to Associated Folding Box Co., South Boston, Mass. Filed June 29, 1950—Issued May 22, 1951.

A box blank comprising a sheet of paperboard creased to provide bottom, side and end wall panels, each end wall panel being integral with and extending outwardly beyond an end of the bottom wall panel and each having a tab integral with the end wall panel and extending outwardly beyond a crease line across the junction of the tab and panel, each end wall panel and tab having two cuts therein parallel with and adjacent to its side margins and intersecting said crease line, an end wall flap integral with and extending outwardly beyond each end of each side panel and of a width equal to the length of the end wall panel, and a locking tab on and projecting laterally beyond the outer side margin of each flap and having an abrupt locking shoulder facing inwardly of the blank, the flaps and locking tabs being adapted to tuck into the adjacent cuts with the locking tabs extending outwardly beyond said crease line and overlapping the first named tabs.

U.S. 2,553,923 — Wrapping Paper Comprising Single Face Corrugated Board and Integral Fly Webs. Ralph E. Lambert, Fort Wayne, Ind. Filed September 11, 1948—Issued May 22, 1951.

As a new article of manufacture, a cylindrical roll of wrapping material, said roll having a uniform number of plies substantially throughout its length and width and comprising a corrugated protective strip, and a backing web adhesively connected therewith and having free fly sheet margins folded directly upon the backing web on the opposite face thereof from that which is connected with said corrugated strip, said margins being adapted to be unfolded for use, its initial direction of fold being opposite to the direction in which the margins project when in use, the lines of fold of said margins being at the ends of the roll, and the said backing web and fly sheet margins and corrugated strip being rolled unitarily in cylindrical form with the inwardly folded fly sheet margins on the inside.

U.S. 2,553,928—Roll Web Terminal. Joseph E. McMullen, Milwaukee, Wis., assignor to The Journal Company, Milwaukee, Wis. Filed July 12, 1945—Issued May 22, 1951.

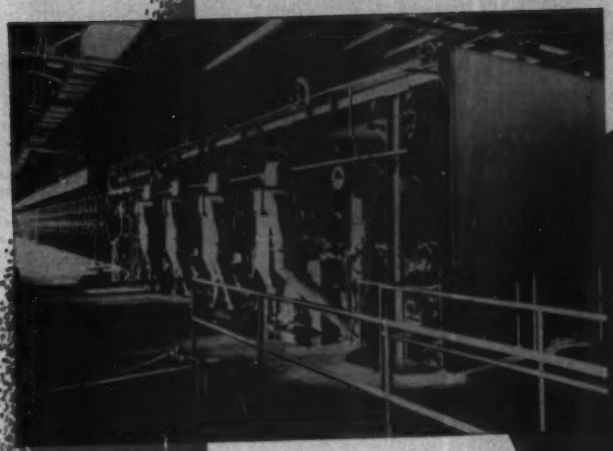
A method of preparing a roll web terminal for a paster joint, which comprises punching a laterally spaced series of apertures in the terminal portion of the web at points spaced from the end thereof, severing said web between consecutive apertures along a line substantially tangent to the sides of the apertures, and adhesively applying tabs of less width than the diameter of the apertures through the apertures to underlying portions of the roll and across the intervening web terminal portions to the roll beyond the web end.

U.S. 2,554,034 — Papermaker's Felt. John P. Koester and Harold S. Comer, Piqua, Ohio, assignors to The Orr Felt & Blanket Company, Piqua, Ohio. Filed August 18, 1948—Issued May 22, 1951.

A woven fulled wet pulp handling felt consisting of warp and filling textile yarn systems, said warp system consisting of all non-felting textile yarn and said filling system consisting of a non-felting textile yarn and a yarn composed in its major part of wool and substantially larger in size than the non-felting textile yarn and laid in a regular repeating pattern with the wool yarn of the filling system comprising at least 50% of the yarn of the filling system and with both yarns of the filling system extending through the felt to both faces thereof.

U.S. 2,554,035—Manufacture of Combined Paperboard and Silicate-Clay Adhesives Therefor. Robert L. Kreyling, Parkersburg, W. Va., assignor to Philadelphia Quartz Company, Philadelphia, Pa. Filed September 3, 1946—Issued

A clay-silicate adhesive which when heated to temperatures of from about 50° to 85° C. is suitable for use on high-speed laminating machines, which comprises from about 12 to 25 per cent of a colloidal clay dispersed in an aqueous phase comprising a sodium silicate solution having a per cent by weight ratio of SiO_2 to Na_2O within the range of about 3.2:1 to 3.9:1, having a viscosity of from about 1 to 8 poises at 20° C. and a gravity of from about 33° to 44° Bé., sufficient clay being present to produce a filter test of from about 0.01 to 3 ml. and an over-all viscosity at 20° C. of from about 5 to 15 poises, the over-all viscosities varying inversely with the filter tests within the ranges set out, the aqueous phase viscosity and the silicate ratio of the adhesive being so correlated that the lower viscosities occur with the higher silicate ratios.



Alton's No. 3 machine, world's record corrugated producer. Photo courtesy of Alton Box Board Company, Alton, Illinois.

3 WAY SERVICE

at Alton Box [illegible]ny

HERE are the three water treatment services performed by Nalco at Alton Box Board Company, Alton, Illinois. In addition, experimental work on process waters using Nalco anti-foam chemicals is now being done at Alton:

1 SLIME CONTROL chemicals, fitted to Alton Box Board requirements, help maintain high quality . . . prevent slime spots and breaks due to slime.

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Use of Nalco Chemicals and Services at Alton Box Board Company shows clearly the wide extent to which good water treatment, properly applied, can be utilized to make over-all mill operation cleaner, more efficient and more economical.

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The aqueous phase viscosity and the silicate ratio of the adhesive being so correlated that the lower viscosities occur with the higher silicate ratios; the composition of the aqueous phase of said adhesive being such that its viscosity and gravity fall on its viscosity-gravity curve along that portion which extends from the knee to maximum values, falling on the high viscosity leg of said curve, of about 8 poise and 44° Bé.; the gravity and the silicate ratio being so correlated that the higher gravities occur with the lower silicate ratios; said adhesive having the characteristic property of having an over-all viscosity which even without loss of moisture passes through a minimum value of from about 0.5 to 5 poises within the temperature range of from 50° to 85° C. and which rises with increase of temperature above said minimum whereby a flash set is produced upon application of said adhesive to a surface which is preheated to a temperature above that of said viscosity minimum; the clay content of the adhesive being undissolved and unreacted.

In the manufacture of corrugated paper board on a high-speed corrugating machine, the process which comprises maintaining a body of the adhesive of claim 1 at a temperature within the range of from about 50° to 85° C. While retarding the evaporation of water from the surface of said body, transferring said heated adhesive to the tips of the corrugations of a ply to be laminated, applying another ply, which has preheated to a temperature within the range of about 90° to 150° C., over said adhesive and uniting said ply with the corrugated ply by the application of heat and pressure.

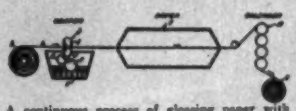
U.S. 2,554,114— Shredding Machine. Arthur H. Menkin, Elmhurst, and Charles H. Morhardt, Baldwin, N. Y., assignors to The Shredmaster Corporation. Filed August 6, 1948—Issued May 22, 1951.

A shredding machine comprising a pair of parallel rotary shafts, a series of spaced circular cutting knives assembled on each of said shafts and rigidly affixed thereon to rotate therewith the cutting knives on one of said shafts alternating with and overlapping the cutting knives on the other of said shafts, a series of stationary combers on each of said shafts between the cutting knives thereon respectively and spaced therefrom, each of said combers comprising a substantially circular plate having a central opening therethrough for the respective shaft, substantially the entire periphery of each of said plates lying within the periphery of said cutting knives, said plates each having an extension lying in the same plane thereof and integral therewith, said extensions protruding beyond the periphery of said cutting blades at the top thereof, means engaging said extensions to retain said combers in fixed position, a deflector plate positioned over each series of combers and means to feed material into said cutting knives at the overlapping portion thereof.

U.S. 2,554,454—Process for Laminating Paper. George S. Casebolt, Darien, Conn., assignor to American Cyanamid Company, New York, N. Y. Filed June 22, 1946—Issued May 22, 1951.

A process of making water-proof paper laminate comprising coating paper sheets with a cooked starch melamine-formaldehyde resin paste, to a spread in excess of 10 pounds per thousand square feet per glue line, assembling and cold pressing the sheets together and curing the assembled laminate under controlled humid conditions in excess of 70% relative humidity, wherein the starch resin adhesive is prepared by blending starch, cooked at a pH below 8.6, and melamine-formaldehyde resin, in a weight ratio of 5:1 and 20:1 respectively, said paste having pH adjusted to 7.3-9.4.

U.S. 2,554,662—Process of Glossing Paper. William W. Cowgill, Fairfield, Conn., assignor to United States Rubber Company, New York, N. Y. Filed August 16, 1947—Issued May 29, 1951.



A continuous process of glossing paper with a thermoplastic resinous polymeric material selected from the group consisting of polystyrene, polyethylene, polyvinyl chloride, polyvinyl alcohol, copolymers of vinyl chloride and vinyl acetate, polymerized methyl methacrylate, resinous copolymers of from 80 to 97 per cent by weight of styrene and correspondingly from 20 to 3 per cent by weight of butadiene, resinous copolymers of from 65 to 80 per cent by weight of styrene and correspondingly from 35 to 20 per cent by weight of acrylonitrile, and copolymers of from 65 to 80 per cent acrylonitrile and correspondingly from 35 to 20 per cent of isobutylene and having a second order transition temperature between 40° C. and 125° C. which comprises applying a coating of an aqueous dispersion of said resinous material on the surface of the paper, drying the coated paper at a temperature which is from 20° C. to 60° C. higher than the second order transition temperature of said resinous material and thereby removing the water from the coating and causing said resinous material to adhere to the surface of the paper in the form of small particles constituting a discontinuous film in preparation for the subsequent glossing step, continuously glossing the coating of resinous material on the surface of the paper by subjecting the dried coated paper to a continuous even-speed calendering operation in which the coated surface of the paper is pressed continuously against a heated highly polished roll surface which is at a temperature from 40° C. to 80° C. higher than the second order transition temperature of said resinous material and thereby converting said coating of resinous material on the surface of said paper to a thin continuous highly glossed surface, and continuously stripping the resulting hot glossed paper from said heated highly polished roll surface while said paper is at the temperature to which it is heated in said glossing step.

Can. 473,698 — Wall Board. Jean Halin, Trois-Rivieres, Quebec, Canada, assignor of one-third each to Joseph Germain and Guillaume Dunn, Montreal, Quebec, Canada. Filed April 29, 1949 — Issued May 15, 1951.

A fibreboard of the character described, comprising a base of fibrous material, suitable amounts of alum and resinous glue, together with iron oxides in the proportion of from 5% to 14%, and magnesium sulphate in the proportion of from 2% to 11% of the weight of the fibrous material in the dry form.

In the manufacture of a fibreboard comprising the conversion of a fibrous matcrial into pulp while bringing it in contact with liquid and the addition of resin, and 150 to 200 cc. per pound of paper of capacite, the mixing to above elements while in a fluid state, of 5% to 14% of powdered oxides to iron and from 2% to 11% of magnesium sulphate with respect to the weight of the fibrous material in the dry state.

Can. 473,753 — Acid-Resistant Wet Strength Paper. Tzeng-Jieuq Suen, Stamford, Connecticut, U.S.A., assignor to American Cyanamid Company, New York, New York, U.S.A. Filed June 20, 1949 — Issued May 22, 1951.

Fibrous cellulosic material impregnated with a resin which is a cured condensation product of formaldehyde, a water-soluble salt of sulfurous acid, and a phenol of the group consisting of phenol, the cresols, the xylenols and resorcinol, the molar ratio of SO_3 relative to said phenol being from about 0.01:1 to about 0.3:1, said fibrous cellulosic material having good wet strength in the presence of acid.

Fibrous cellulosic material impregnated with a resin which is a cured condensation product of formaldehyde, a water-soluble salt of sulfurous acid, phenol and resorcinol, the molar ratio of SO_3 relative to total phenol and resorcinol being from about 0.01:1 to about 0.3:1 and the molar ratio of resorcinol relative to phenol being from about 0.2:1 to 1:1, said fibrous cellulosic material having good wet strength.

A process which comprises treating an aqueous suspension of fibrous cellulosic material with from about 1-10% resin solids, based on weight of dry pulp, of an aqueous solution of a resin which is a condensation product of formaldehyde, a water-soluble salt of sulfurous acid, phenol and resorcinol, the molar ratio of SO_3 relative to total phenol and resorcinol being from about 0.01:1 to about 0.3:1 and the molar ratio of resorcinol relative to phenol being from about 0.2:1 to 1:1, forming the resin-treated suspension into a sheet, and curing said resin by heating the formed sheet, whereby a sheet of cellulosic material of good wet strength in the presence of acid is obtained.

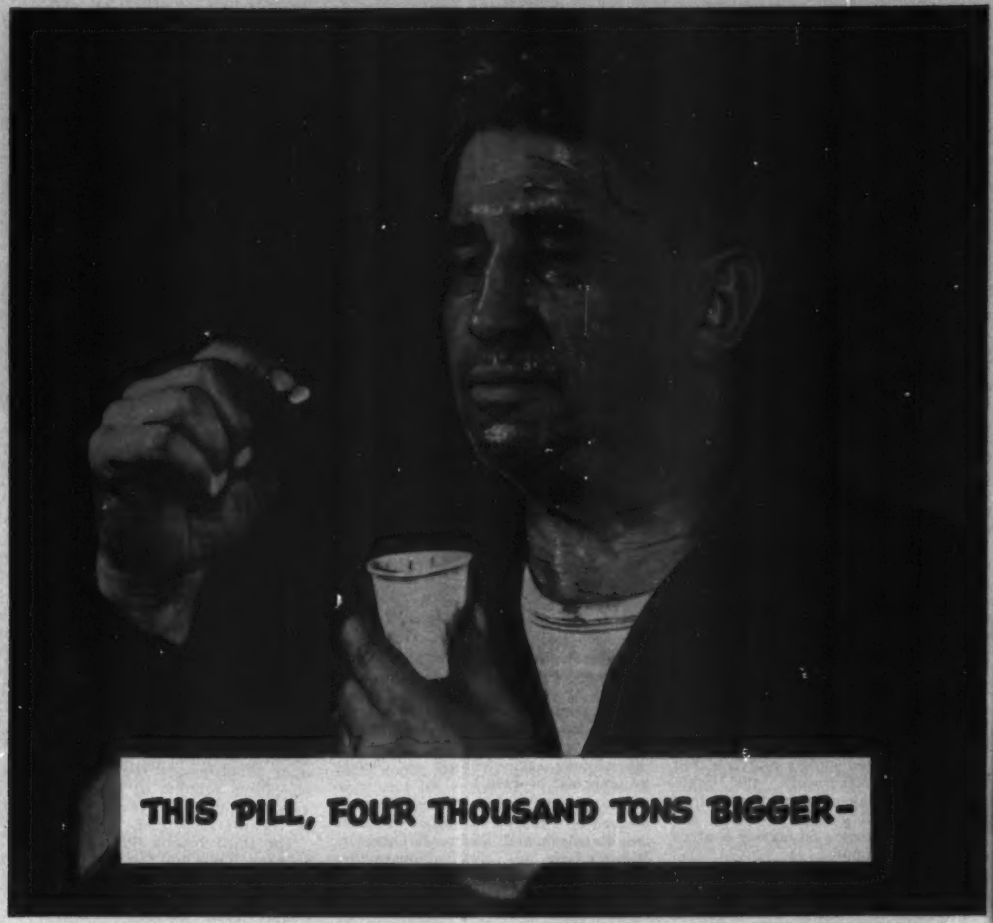
A process which comprises treating an aqueous suspension of fibrous cellulosic material with alum and from about 1-10% resin solids, based on weight of dry pulp, of an aqueous solution of a resin which is a condensation product of formaldehyde, a water-soluble salt of sulfurous acid, phenol and resorcinol, the molar ratio of SO_3 relative to total phenol and resorcinol being from about 0.01:1 to about 0.3:1 and the molar ratio of resorcinol relative to phenol being from about 0.2:1 to 1:1, forming the resin-treated suspension into a sheet, and curing said resin by heating the formed sheet, whereby a sheet of cellulosic material of good wet strength in the presence of acid is obtained.

Can. 473,835 — Lignin-Stabilized Diene Polymers. William Harold Watson, Sarnia, Ontario, Canada, assignor to Polymer Corporation Limited, Sarnia, Ontario, Canada. Filed April 28, 1948 — Issued May 22, 1951.

In a process for the stabilization of a copolymer produced by the emulsion polymerization of butadiene and a substance selected from the group consisting of styrene and acrylonitrile, the step which comprises adding to a latex of such copolymer prior to coagulation 0.5 to 1.5 parts by weight of lignin for every 100 parts by weight of such copolymer in the latex.

Can. 473,841 — Folding Machines. Charles Hess, Yonkers, New York, U.S.A., assignor to S & S Corrugated Paper Machinery Co., Inc., Brooklyn, New York, U.S.A. Filed July 3, 1948 — Issued May 22, 1951.

A folding machine for folding flat box blanks having predetermined fold lines into tubular form, the said box blanks each having a pair of outer panels defined by fold lines, which panels when folded over toward each other against the blank body will meet at their edges to form a seam.



If the "hot men" of industry didn't take pills to replace the salt they sweat out, they'd collapse. Blood maintains a delicate acid-alkali balance by means of sodium and chlorine compounds. To an amazing degree, these same chemicals must be kept balanced in the life-stream of industry.

For example, there's now a chlorine shortage showing up in thousands of items: pulp and paper, insecticides, plastics, permanent antifreeze. DIAMOND ALKALI, as all the chemical industry, would like to increase chlorine production immediately. Equipment to produce just one ton of chlorine per day costs from $85,000 to $100,000, new plants take two years to build; nevertheless, the industry expects to be producing an additional 2000 tons a day during 1952.

This, however, is only the half of it. Every time a ton of chlorine is produced, a little over a ton of caustic soda is also produced. Two thousand tons more chlorine force industry to swallow 2000 tons more caustic, which means new users must be found. This constant balancing off of chemicals with their twins is at once the goad and the genius of chemistry.

DIAMOND ALKALI CHEMICALS

Chemicals you live by ... **DIAMOND ALKALI COMPANY** CLEVELAND, OHIO

SODA ASH • CAUSTIC SODA • CHLORINE & DERIVATIVES • BICARBONATE OF SODA • SILICATES • CALCIUM COMPOUNDS • CHROME COMPOUNDS • ALKALI SPECIALTIES

Empire State Meets at Whiteface

With the theme of "The Future of the Pulp and Paper Industry in New York," 300 members of Empire State TAPPI gathered for their annual meeting at Whiteface Inn, Lake Placid, June 27-30. The Metropolitan District was the host. The technical program was highlighted Thursday morning by G. A. Pesez, Woodlands Dept., International Paper Co. In brief, he stated:

"New York State pulp mills obtain nearly two-thirds of their pulpwood from other states and Canada. This is a very unsatisfactory situation, and it is becoming worse because wood from outside the State probably will be harder to obtain in the future. There are in New York about 11,000,000 acres of commercial forests, but under present conditions it is doubtful that any company is growing as much wood annually on its own holdings as required to maintain its mill in full production.

"A logical step would be for mills to acquire more forest land, but there are several deterrents to such a course. Additional planting of suitable species would be another approach. More intensive use of hardwoods, and by-products such as veneer cores and saw mill slabs, would be highly desirable. Various problems and possibilities in this connection are discussed, including mechanical procedures, chemical debarking, etc.

"The combined efforts and research of pulp manufacturers, the State Conservation Department and other agencies should go far to reduce the growing dependency on outside sources of pulpwood supply."

J. Victor Skiff, Deputy Commissioner, State of New York Conservation Dept., followed with "Public and Private Forestry Get Together." He said in part:

"A survey of forestry needs disclosed the need for development of cooperative effort between the State and forest owners to make the woodlands of New York more productive. With the enactment of the Forest Practice Act considerable progress has been made in the practice of forestry on privately owned woodlands according to a well organized plan.

"It is the policy of the Conservation Dept. to bring public and private forestry together in close teamwork, with the State bringing the type of advice and assistance to private forest landowners which it is difficult for them to provide themselves. It is believed that this policy is well supported by the services now rendered, for example by reforestation through State nurseries, fire control through the ranger force, protection from forest pests and technical forestry service to the forest landowners."

Professor F. W. O'Neil closed the first session with his paper, "We Have Pulpwood in New York State," by stating:

"Pulpwood supplies are still available in New York and New England. Admittedly the coniferous species are not in large supply and percentagewise the amount decreases each year. However, the available hardwood supply is increasing yearly to such an extent that the forests are producing more pounds of wood each year. If the morphological characteristics and chemical composition of the hardwoods are considered, when purification procedures are developed, excellent pulps can be manufactured from the northeastern hardwoods. Pulps for specific purposes can readily be produced by the sulphate, semi-chemical and chemi-groundwood process."

The second technical session commenced on Friday morning. P. S. Bolton, Research and Technical Director, Robert Gair Co., Inc., Uncaseville, Conn., led off on "Trends in the Paperboard Industry." He issued the challenge that in waste paper there was a supply of fiber equal to thousands of acres of pulpwood, that while it was being used to a large extent, more was available, and when proper processing was developed it would become a still more important source of fiber.

"Some Economic Aspects of Burning Sulphite Liquor," by W. J. Darmstadt and F. H. Richter, of the Babcock & Wilcox Co., focused attention on the effect of fuel prices and the capital costs on this solution to the problem. Technically the design and operation problems appear to have been overcome.

Clinton K. Royce, U.S. Navy, outlined packaging problems from a quality and quantity standpoint. He said in brief:

"The Department of Defense describes packaging as the science of preparation of material for shipment (and storage).

"Each of the three military services has a packaging coordinating committee called a Packaging Board to handle matters of general interest to each particular service. The activities of these three service committees or boards is coordinated through the Packaging Agency of the Munitions Board.

"In a few short years our war economy has gone from one of plenty to one of scarcity. Particular emphasis has been placed upon the conservation of raw materials going into packaging components by the Department of Defense. This emphasis, however, is directed at the overall problem which seems to be trees rather than individual materials derived from trees such as paper, lumber, plywood, cellulose, etc.

"A wider temperature range through which packages must protect their contents has been set up by military people. This has resulted in the need for new materials to take the place of waxes and asphalt as a waterproofing agent for paper.

"The military services are working closely with industry on their packaging problems and there seems to be substantial promise of more standardization within and between the services as regards packaging requirements."

The third session heard Horace A. Spencer, Knowlton Brothers, active in the pollution studies within the state, call for more active participation of Empire State Section in the proper enforcement and interpretation of N.Y. States Model Law.

L. F. Engelhart, head of Eastern Products Development Laboratory, International Printing Ink Div. of Interchemical Corp., Elizabeth, N. J., outlined the new demands on paper because of increasing printing speeds.

The sessions closed with Dr. E. C. Jahn, College of Forestry, outlining

Left to Right—Ralph Prince, Sec.-Treas.; Henry J. Parry, Retiring Chairman; J. J. Reichart, Chairman

Left to Right—Chet Landes, Technical Chairman; Jerry Perez and Fred O'Neil, Speakers; Irv. Earle, Sessions Chairman

Syracuse Pulp and Paper Alumni Get-Together Breakfast at Whiteface, N. Y.—Empire State T.A.P.P.I. meeting—June 29, 1951. From left front, around table: Edward Boyle, F. R. Boyle, Mrs. T. F. La Haise, Mrs. H. W. Bartlett, Mrs. H. W. Bartlett, H. W. Bartlett, T. F. La Haise, Donald M. Ferguson, Mrs. D. B. Geffken, D. B. Geffken, George B. Martin (at head of table), W. R. Willets, I. V. Earle, M. F. Healy, Jr., Mrs. M. F. Healy, Jr., Mrs. T. Everett English, T. Everett, English, C. I. Gehring, Mrs. Edward Boyle, Mrs. F. R. Boyle.

the reciprocal of Paper and Plastics. He said in summary:

"The remarkable growth in the development of many new types of plastics during the past twenty years is reflected in new combinations of plastics with paper. Methods of addition of plastics to paper were described; these include tub sizing, saturation, beater addition, coating and film lamination.

"A survey of paper-plastics combinations and their uses covers the following types: sized papers, wet strength papers, flexible boards, grease and moisture resistant papers, coated papers, laminated papers, laminated structural products and molded pulp products. Many new developments are predicted for the near future."

Afternoons were devoted to social events, including a boat trip, golf, bridge, and dancing.

The annual session confirmed Dr. J. S. Reichart, Dupont, as chairman for 1951-52; Foster P. Doane, Sandy Hill, chairman elect; and Ralph N. Prince, American Cyanamid, secretary-treasurer. The financial condition was reported, income balanced out to go. Homer M. Rice, Dupont, was elected a life member of the Section.

Foster P. Doane's announcement that Whiteface Inn had been chosen for the 1952 meeting was greeted with thunderous applause.

The meeting closed with a note of appreciation to Chester G. Landes, American Cyanamid, chairman of Technical Sessions; W. R. Willets, Titanium Pigments Corp., mill visits chairman; P. L. Haggerty, Geo. La Monte & Son, publicity chairman; J. F. Butterworth, Socony-Vacuum Oil Co., reservations and finance chairman; K. E. Youngchild, American Cyanamid Co., social events chairman; Mr. and Mrs. Robert Drummond, International Paper Co., golf; Mrs. Ralph Prince and Mrs. John Heuer, ladies events; Ivar Ekholm, Allied Chemical & Dye Corp., trapshooting; Henry J. Perry, *Paper Trade Journal*, general chairman.

ORGANIZE FIBRE FABRIC ASSN.

Seven weavers of fibre fabric, who together account for more than 80 percent of the annual 18 million yard output, have formed the Fibre Fabric Group to acquaint consumers with the facts about fibre, its quality, its economy, and its versatility; and through research, the material's wide and varied possibilities.

Fibre fabric up to now has been used principally in the manufacture of automobile seat covers, floor coverings, and food packaging materials.

Ross A. Fife, executive secretary of The Tissue Assn., who made the announcement for the Fibre Fabric Group, said that the new organization will function as an autonomous affiliate of The Tissue Assn.

The group's Advertising and Promotional Committee has taken the final steps to initiate a broad program of product research aimed at further development of a number of the over 100 uses for fibre fabric already known. "Ways have been found, for instance, to make a fibre fabric that will successfully withstand extreme changes of temperature and moisture, in addition to possessing superior wearing characteristics," Mr. Fife explained. "And while the fibre fabric makers themselves knew the potentialities of their product, none of the public and only a handful of our distributors knew the story. The program now being undertaken will carry out an implicit service to the consumer, therefore, by finding out and making public the fullest information about fibre, what it is and what it can be."

PLANT MAINTENANCE SHOW

The Plant Maintenance Show will next be held at Convention Hall, Philadelphia, January 14-17, 1952. The exposition, held for the first two years in Cleveland, has been moved to Philadelphia to permit greater attendance from the eastern industrial area. The second show attracted visitors from 39 states and more than 10 foreign countries.

Concurrently with the show, the Plant Maintenance Conference also will be held. L. C. Morrow, consulting editor, Factory Management and Maintenance, will serve as chairman. The last conference drew audiences of 1,700 at a single session and is one of the best attended annual technical conferences in the country.

ANNOUNCE 1952 MEETING

The Forest Products Research Society has announced the location and dates for its sixth annual national meeting to be held in Milwaukee, Wis., June 23, 24 and 25, 1952. Upwards of 1,000 persons are expected to be in attendance at the program which will include presentation of technical papers on a wide range of forest products subjects, as well as visits to nearby wood utilization and wood supplying plants.

NEW EQUIPMENT

New Supercalender

On this new supercalender the finished paper is wound onto a core that rests between two powered drums instead of directly onto a single motor-driven roll. With this method of windup the paper can be trimmed as it emerges from the supercalender and wound directly on the shipping core. On other drives the supercalendered roll is wound on mill cores, necessitating rewinding prior to shipment.

A new drive is designed to provide higher production with less physical labor.

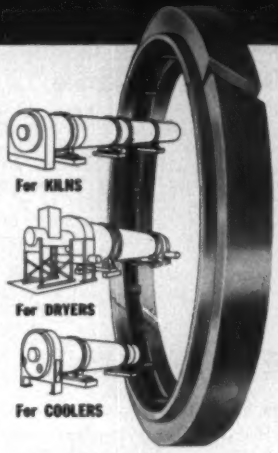
Both the unwind and windup are separately powered, much in the manner of skin-pass steel-strip mills. Furthermore, their action is inter-related so that during starting, running and stopping—with the diameter of paper (and inertia) on each roll constantly changing—the unwind generator holds back just enough and the windup motor pulls just hard enough to maintain uniform, constant tension in the paper sheet. Also because the unwind braking generator can be operated at slow speed as a motor, threading the end of a new sheet through the calender rolls is enormously facilitated. No longer does it have to be cranked off by hand.

Moisture Tester

A moisture testing instrument specifically designed for testing wood flour, wood shavings, wood chips, sawdust and similar by-products is an-

Reduce Production Losses

DUE TO DOWN TIME



GEARS • PINIONS • METAL TIRES • TRUNNIONS • SHEAVES • SPROCKETS • CRUSHER PARTS • RACKS AND PINIONS

CRANE WHEELS • JAW PLATES • CRUSHER PARTS • SPROCKETS • SHEAVES • TRUNNIONS • METAL TIRES • PINIONS

REPLACE WORN OR CRACKED TIRES WITH

Stroh

DIAGONALLY CORED SPLIT TIRES

Stroh diagonally cored split tires can be installed on kilns, coolers or dryers in *as little as 36 hours*—including reaming of holes and riveting. No need to tear out sections or disturb shell alignment. Mating surfaces, welded after installation, cannot loosen under action of load or heat. Welded joints do not "hump" and roll smooth in operation.

Write today!

Stroh PROCESS STEEL CO.

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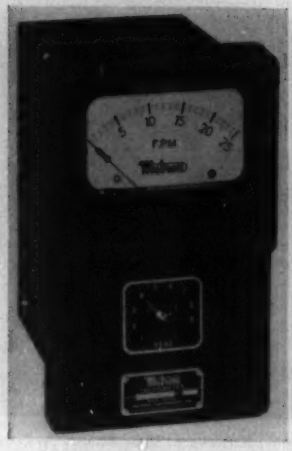


nounced. Employs the principle of high frequency power absorption to give accurate testing to zero percent moisture. The instrument has a penetration of three inches, is portable and simple to operate, according to its producer. Moisture content is determined by pressure of the gun electrode against a sample of the material, preferably placed in a small container such as a wide-necked glass jar. The unit operates with a press of the thumb and one reading only is required to determine moisture content, it is stated.

Tachometer Monitor

Speeds of many machines are now measured from one convenient location, with a new tachometer which employs a simple machine selector knob. Quick, accurate speed tests and comparisons are easily accomplished, even when the indicator is located up to 1000 feet from any of the machines, it is said.

Over 50 standard full scale range markings are available. Direct reading, such as r.p.m., f.p.m., inches/sec., from any speeds between 1/10 r.p.m. and 100,000 r.p.m. are offered by use of various tachometer heads. No speed changing drives are required.

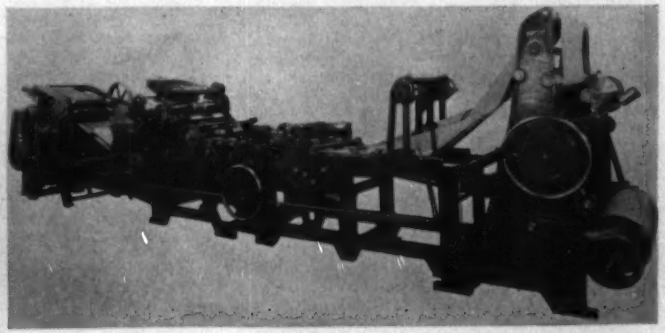
IMPROVE TURPENTING METHOD

TALLAHASSEE, FLA. — The Florida Forest Service, which has been working for years toward better turpenting methods so that a larger proportion of trees will be usable, after turpenting operations have ceased, for pulpwood and other merchantable products, reports that Florida now has 45 percent more turpentine producers who are now using the sulphuric acid stimulation method, compared with last year. This makes Florida the second ranking state in the number of acid users, Georgia being first.

First used commercially in 1942, the acid stimulation method seems to be the answer to the falling profits of the naval stores industry.

Satchel-Bottom Bag Machine

Identified as Model 43, the new bag-making machine makes satchel-bottom bags from a 5-lb. sack to a 1/6th barrel size. Features a 3-station drum for increased speeds, rotary cut-off that reduces noise level of machine and makes a finer serration on the lip of finished bags; paper-speed thumb notching arrangement; adjustable former to vary width of sack; and a new paper roll lifting device.



Hamilton Felts

MIAMI WOOLEN MILLS

Established 1858

Maine, the state of "inexhaustible forests," is reported to be making paper products from its surplus crop of potatoes, some 30,000,000 bushels.

This may be a good way to dispose of the surplus goobers, but it doesn't go far toward easing the shortage of paper and board. There is a lot of water in a potato compared with the small amount of fibre.

Removal of water is the business of Hamilton Felts. Whether you are using pulp of spruce, lob lolly, old newspapers and cartons or potatoes, you will find a Hamilton Felt that will remove the water faster and at lower cost.

SHULER & BENNINGHOFEN, HAMILTON, OHIO

PRICES

The prices below reflect market quotations in New York at the mill level on standard grades. Does not include spot offerings.

PAPER AND BOARD

Standard News, Delivered Ports
Rolls, contract, per ton $105.00/116.00
Sheets ..... 118.00/ —

F.o.b. Mills. C.l. Frt. allowed, dock, N. Y.

Kraft— pr cwt., 40# base wgt.
Standard Wrapping Rolls ..... $7.75/ —
No. 1 Wrapping Rolls 8.25/ 8.50
Standard Bag ..... 7.50/ —

Tissues— per ream 24x36 (480) 10 lbs. 2500 lbs or more

Wh. No. 1 Frd.	$1.95	/$2.25
Wh. No. 1 MG	2.10	/ 2.40
Wh. No. 1½	1.85	/ 2.15
Wh. No. 2	1.85	/ 2.15
Kraft Anti-Tar 20x30	1.85	/ 2.15
White Anti-Tar 20x30	1.95	/ —

Toilet— per case of 100 rolls—1 M sheets

Unbleached 4½x4½	$8.00/$8.25
Unbleached 4½x5	6.60/ —
Bleached 4½x4½	10.00/12.50
Bleached 4½x5	9.85/ —

Per Case of 50 rolls—2000 sheets

Unbleached 4½x4½	$8.00/$9.75
Bleached 4½x4½	6.95/ —

Per Case of 100 rolls—1000 sheets

Facial, 4½x5, 2-ply	$8.95/10.65

Paper Towels—per case of 3750

Wh. Jr. M'tif'd 9½x9½	$5.75
Br. Sr. M'tif'd 9½x12	4.10
Br. Jr. M'tif'd 9½x9½	3.60
Br. Jr. Spl. fold 9½x10½	3.65
Blchd. 7½x11, 24/25 rolls	$7.00/7.55

Manila, per cwt.

No. 1 Jute Tag, 100-lb., sheets*	$19.55/21.55
Reg. Jute M.F. 40-lb., sheets*	18.00/20.00
Wrapping Manila	8.75/10.50
Printing Manila	10.50/12.00

* Less usual allowance for rolls.

Gummed Tape—per bdl., 500 bdls. or more

90-lb. 375 ft. GSI	$7.20	/ —
60-lb. 600 ft. GSI	7.20	/ —
35-lb. 800 ft. GSI	8.28	/ —
35-lb. 500 ft. GSO	6.31	/ —

MARKET WOOD PULP

Third Quarter Contract Prices, Per Short Air-Dry Ton

	Varying freight allowances		On Deck Atlantic Ports		
	*U. S.	Canadian	*Swedish	*Finnish	*Norwegian
Groundwood	$92.50/ —	‡$95.00/100.00			
Sulfate, Bleached	145.00/ —	190.00/200.00	$230.00/ —	$230.00/ —	$230.00/ —
Semi-bleached Sulfate	140.00/ —				
Sulfate, Unbl.	132.50/ —	145.00/175.00	200.00/ —	200.00/ —	
Sulfite, Blchd.	140.00/ —	160.00/175.00	225.00/ —	225.00/ —	225.00/ —
Sulfite, Unblchd.	132.50/ —	150.00/160.00	200.00/ —	200.00/ —	
Sulfite, Unbl'd (Glassine)		164.00/ —			
Soda, Blchd.	140.00/ —	155.00/160.00			
Sulfite Screenings	72.50/ —				
Sulfate Screenings	67.50/ —				
Groundwood Screenings	60.00/ —				
Unblchd Sulfate Sideruns	132.50/ —				
Stand. News. Sideruns	92.50/ —	106.00 —			

* OPS Ceiling, CPR 49 ‡ F.o.b. Shipping Point.

Boards, per ton—

Filled News	$107.50/ —
Plain Chip	105.00/107.50
Blchd. Mln. L-d. Chip	147.50/ —
White Pat. coated .020	170.00/ —
Kraft Liners 42 lb.	115.00/117.50
Kraft Corr. .009	122.50/124.00
Binders Boards	137.50/140.00

The following prices are representative distributors' resale prices.

Rag Content Bonds and Ledgers—
White, 20 lb.

Bonds	4 Ctns.
	per cwt.
100% Rag Ex. No. 1	$70.45/$75.90
100% Rag	62.65/ —
75% Rag	48.15/ —
50% Rag	38.90/ —
25% Rag	31.65/ 33.00

Ledgers	4 Ctns.
	per cwt.
100% Rag Ex. No. 1	$72.65/$72.80
100% Rag	53.90/ —
75% Rag	49.40/ —
50% Rag	40.20/ —
25% Rag	33.00/ 34.30

Sulphite Bonds and Ledgers
White, 20 lb.

Bonds	4 Ctns.
	per cwt.
Watermarked	$19.00/$20.50
Plain	18.05/ 19.50

Ledgers	4 Ctns.
	per cwt.
Watermarked	$20.30/$21.80
Plain	19.35/ 20.80

White Book

Conversion Coated	Case
	per cwt.
No. 1	$23.40/$24.65
No. 2	21.90/ 23.40
No. 3	20.40/ 22.40
Machine Coated	
No. 1	$18.15/$18.40
No. 2	16.15/ 16.65
Uncoated	
No. 1 Antique (Watermarked)	$18.65/$19.15
Offset	17.40/ 19.90
A Grade E. F.	17.40/ 18.15
A Grade S. C.	18.15/ 18.65
B Grade E. F.	17.65/ —
B Grade S. C.	16.90/ 18.40

‡ Indicates a price change.

WASTE PAPER MARKET

The following quotations were gathered from major dealers in each market. They are an indication of the price range in which volume tonnage was moving on the date specified. Prices to mills, per ton, f.o.b. cars shipping point (includes brokers' fee.)

	New York	Philadelphia	Boston	Chicago
	July 9	July 6	July 7	July 5
No. 1 Mixed Paper	$19.00/ 24.00	$21.00/ 24.00	$19.00/ 21.00	$20.00/ —
Boxboard Cuts	20.00/ 25.00	21.00/ 24.00	26.00/ —	25.00/ —
Mill Wrappers	20.00/ 30.00	25.00/ 30.00	22.00/ 30.00	22.00/ —
No. 1 News	23.00/ 25.00	22.00/ 25.00	— /22.00	22.00/ —
Over-issue News	28.00/ 35.00	30.00/ 35.00	22.00/ 24.00	25.00/ —
Corrugated Containers	64.00/ 68.00	58.00/ 63.00	64.50/ 66.00	52.00/ —
New Corrugated Cuts	Nominal	60.00/ 65.00	55.00/ 65.00	62.00/ —
Double Kraft Ld. Corr. Cuts *	115.00/120.00	105.00/120.00	120.00/140.00	120.00/ —
100% Kraft Corr. Cuts *	140.00/165.00	125.00/135.00	130.00/170.00	140.00/ —
Used Kraft Bags *	85.00/105.00	80.00/ 85.00	85.00/116.50	65.00/ —
No. 1 Brown Kraft Paper	70.00/ 75.00	90.00/ 95.00	90.00/110.00	65.00/ —
Super Resorted Br. Kraft *	100.00/105.00	100.00/105.00	100.00/125.00	90.00/ —
New Br. Kraft Env. Cuts *	160.00/180.00	160.00/175.00	160.00/180.00	150.00/ —
New Br. Kraft Cuts *	150.00/175.00	130.00/140.00	150.00/180.00	140.00/ —
No. 1 Gdwd Shvs.	65.00/ 70.00	50.00/ 65.00	75.00/ 85.00	55.00/ —
White Newsblanks	100.00/110.00	80.00/ 90.00	90.00/100.00	80.00/ —
No. 1 Flyleaf Shvs. *	80.00/120.00	80.00/ 85.00	95.00/110.00	100.00/ —
No. 1 Soft Wht. Shvs. *	160.00/190.00	170.00/175.00	175.00/195.00	175.00/ —
Super Soft Wht. Shvs. *	190.00/200.00	190.00/200.00	190.00/210.00	185.00/ —
Hd. Wht. Shvs. *	185.00/210.00	190.00/215.00	190.00/215.00	180.00/ —
Hd. Wht. Env. Cuts *	200.00/245.00	200.00/225.00	200.00/235.00	190.00/ —
New Manila Env. Cuts *	140.00/150.00	160.00/165.00	140.00/165.00	115.00/ —
Col. Tab Cards *	110.00/120.00	115.00/120.00	95.00/150.00	100.00/ —
Manila Tab Cards *	170.00/185.00	165.00/190.00	160.00/200.00	165.00/ —
No. 1 Mixed Ledger *	95.00/105.00	100.00/105.00	87.00/110.00	100.00/ —
White Ledger *	130.00/140.00	135.00/130.00	125.00/140.00	125.00/ —
No. 1 Book & Mag.†	41.00/ 45.00	35.00/ 45.00	40.00/ 60.00	25.00/ —
No. 1 Rep'd. Hvy. Books‡	50.00/ 55.00	50.00/ 65.00	60.00/ 75.00	50.00/ —

* GCPR Ceiling. † Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% groundwood.

RAG MARKET

New Domestic Cotton Cuttings
OPS Ceiling Price, CPR 28
Delivered Mill Basis

Add 7½% Dealer Commission

No. 1 White Shirts	$21.00
No. 1 Unblchd. Muslins	21.00
Blchd. & Unblchd. Underwears	21.00
Blchd. Canton Flannels	21.00
No. 1 Light Silesias	16.00
No. 1 Light Prints	11.50
No. 1 Blue Overalls	14.50
Suntan Khakis	11.50

Add 10% Dealer Commission

Fancy Shirts	$10.00
Indigo Blues	10.00
Mixed Khakis	8.00
Corduroys	8.00
Cottonades	8.00
No. 1 Washables	6.50

Old Domestic Cotton Rags
(Prices to Dealers, f.o.b. Ship. Pt.)

	Per 100 lbs.
Mixed White	$5.00/$5.50
Cotton Pants & Overalls	4.25/ 5.00
Thirds and Blues, Repacked	2.75/ 4.00
No. 1 Roofing Rags	2.40/ 2.50
No. 2 Roofing Rags	1.90/ 2.00
No. 3 & 4 Roofing Rags	1.80/ 1.90

Bagging
(Prices to Dealers, f.o.b. N. Y.)

	Per 100 lbs.
Foreign Gunny	$6.00/ 6.50
Domestic Gunny, No. 1	6.00/ 6.50
Heavy Wool Tares	8.00/ 8.25
Foreign Manila Rope	8.50/ 9.75
Domestic Manila Rope	9.00/ 9.25
Jute Strings	6.00/ 6.50
No. 1 Sisal Strings	8.00/ 8.25
Paper Mill Tares	5.25/ 5.75
Foreign Scrap Burlap	5.00/ 5.25
Domestic Scrap Burlap	6.50/ 7.00
Austr. Wool Pouches	7.90/ 8.50
New Burlap Cuttings	7.30/ 8.00

MATERIALS

Aluminum, sulfate:		
comm. bags, wks. cwt.	1.65	
iron-free c.l.	3.25	
Alcohol, ethyl:		
tax free, dns. c.l. gal.	1.01	/ 1.05½
dnld. East Miss.		
Alcohol, methyl:		
Synthetic, Zone 1, dns.		
c.l. fr. alld. gal.	.44	
Casein, acid-proc.:		
dom. sh. pt. c.l. lb.	.39	/ .41½
imp. ex. dock lb.	.39½/	.40
Caustic soda:		
c.l. wks. solid, 76%, cwt.	3.35	
flak. & grd. 100-lb. drums	3.75	
liquid 50% tanks	2.55	
liquid 70% tanks	2.61	
China clay:		
dom. air-float. filler, c.l. wks. ton	10.00	
water-washed, comp. filler	11.00	
coating	17.60	/20.50
imported, ex whse. short ton	15.20	/28.35
Chlorine:		
single-unit tanks, works cwt.	2.70	
multi-unit cwt.	3.25	/ 4.40
Formaldehyde:		
USP, inh. dns, c.l. wks. lb.	.0625/	.0675
l.c.l., E. wks.	.0671/	.0725
Fuel oil:		
Bunker C, No. 6 Cal. bry tanks, refinery bbl.	1.95	/ 2.15
light bbl.	2.00	/ 2.25
Hydrogen peroxide:		
USP, 35% clys. E. of Miss. lb.	.23½/	.26½
Lime:		
hydrated, bags, wks. ton	13.50	
Rosin:		
B gum, drms, c.l. Savan. cwt.	7.00	/ 9.00*
G, H, I, K cwt.	7.60	/ 9.49*
FF, wood, do. cwt.	6.50	/ 7.00
* OPS Ceiling, CPR 22.		
Rosin size:		
70%, crum & pale grds, tank cars, south, sh. pt. cwt.	6.47	/ 6.65
Salt cake:		
dom. bulk, c.l. wks. ton	17.00	
wks. frt. all. ton	20.00	/22.00
Soda ash:		
light, 58%, bags, wks.	1.30	
bulk cwt.	1.20	
Sodium silicate 40°:		
turbid. c.l. wks. cwt.	1.30	/
l.c.l. wks.	1.60	/ 1.85
Sodium peroxide:		
dns. c.l. E. of Miss. lb.	.21	
l.c.l. do. lb.	.21½/	.23
Soybean, protein:		
chem. isol, wks. c.l. lb.	.24	/ —
Class. and Chic.		
Sulfuric acid:		
60° Be. clys. cl. wks. cwt.	1.75	/ —
l.c.l. wks. cwt.	2.05	/ 2.85
Sulfur:		
crude, c.l. mines, contract, long ton	21.00	/22.00
f.o.b vessels Gulf long ton	22.50	/23.50
Sulfur dioxide:		
liquid, comm. cyl. wks. lb.	.09	
multi-unit cars lb.	.0535	
Starches:		
pearl corn, bags, c.l. wks. cwt.	6.02	/ —
white dextrines, c.l. wks. cwt.	7.41	/ —
potato, Idaho, c.l. wks. cwt.	5.50	/ —
potato, Maine, c.l. wks. cwt.	5.75	/ —
tapioca, conv. dextrines cwt.	7.75	/ 8.50
low, Siam, on dock N. Y.	5.75	/ 6.00
Talc:	nominal	
domestic, 50-lb. sacks, c.l. wks. ton	25.00	/30.00
Titanium dioxide:		
anastase, c.l. dehl., bags lb.	.21	/ .21½
l.c.l. dehl. lb.	.22	/ .22½
rutile, c.l. dehl. lb.	.23	/ .23½
l.c.l. dehl. lb.	.24	/ .24½

NEW LITERATURE

Abbeon Supply Co. Booklet, "A Few Facts About Dehumidification For Industry". Sales as well as technical copy with specifications.

Committee on Federal Tax Policy. Booklet, "Financing Defense: The Tax Program". With this study, the Committee completes its curent analysis.

American Forest Products Industries, Inc. Booklet, "Trees Forever". Picture story of the development and growth of the industry-encouraged Tree Farm Program.

Eberbach & Son Company. House organ, "Eberbach Announcer of Scientific Equipment". Features Hastings Vacuum Gauge and Switching Unit; Two New International Centrefuges; Powerstat Variable Transformer; Rudolph Utility Polarimeter; Di-Electric Constant Meter; Laboratory Ultrasonic Generator.

General Electric Co. "Continuous Sampling Monitor For Quality Control". Technical data sheet with cuts and specifications. GEC-791.

Midwest Consumers Waste Paper Program. "News and Ideas Bulletin", July 1, 1951. Provides information on how to obtain a waste paper baler priority, through the NPA, Paper and Paperboard Division. Also features a 14-page booklet on objectionable papers and materials in waste paper.

Micro Switch, Division of Minneapolis-Honeywell Regulator Company.

JUDGES
How do you judge a SCREEN PLATE?
NOT BY LOOKS ALONE
If you are like most paper people you want a plate that is durable and rugged enough to stand up to hard knocks while doing its job efficiently.
We can show you a good list of customers who say UNION SCREEN PLATES are durable and rugged and UNION SCREEN gives tops in service
STAINLESS METALS
CORROSION RESISTANT BRONZE
BRONZE FLAT AND CYLINDRICAL PLATES
"CHANNEL BACK"
U. S. PAT. NO. 2,410,193
"CORROSIST"
TRADE MARK REG. U. S. PAT. OFF.
UNION SCREEN PLATE COMPANY
FITCHBURG, MASSACHUSETTS
Pacific Coast Representatives:
PACIFIC COAST SUPPLY CO.
Portland, Oregon
Southern Representative:
T. LAWRENCE JOHNSON
P. O. Box 143, Birmingham, Ala.

Booklet, Volume 5, No. 3, "Instrumentation Electronic, Pneumatic, Mechanical". Features, One-Man Bleach Plant, Gould Paper Company; The Modern Approach To Soybean Processing at Glidden Co.; Alan Wood Steel Company's Water Treatment Plant; Aids River Regeneration; New Flow Transmitter, a differential converter designed for sensitivity of measurement and simplicity of installation and maintenance; New Method For Efficient Engine Testing.

Minneapolis-Honeywell Regulator Company, Brown Instruments Division. "Specification Sheet No. 416-1", covers theory, applications and engineering data on deluxe and medium-priced models of three-way control valves.

Naylor Pipe Company. Bulletin, "Low-Pressure Wedge-Lock Coupling". Includes specifications on pipe sizes. Also illustrates.

Superintendent of Documents, U. S. Government Printing Office. Book, "The New England Economy". A report to the president transmitting a study initiated by the council of economic advisers and prepared by its committee on the New England Economy, July 1951. 205 pp. Price 55 cents.

Remington Rand Inc. Pamphlet, "Seven Ways To Save With Simplified Tool Crib Control". Two basic systems are recommended, Kolect-AMatic and Kardex. For details about tool crib control, request pamphlet KD 641.

Reynolds Metals Company. Brochure, "Reynolds Aluminum and the Company That Makes It". Presents the principal operations of the company under "normal conditions". Describes the uses of aluminum foil in foil packaging for protection and display.

Rockwood Sprinkler Company. Folder, "Rockwood T-Head". Details the new type of fire extinguishment head. Illustrated.

The Rubber Manufacturers Association. Manual, 16 pp. "Engineering Standards for Multiple V-Belt Drives". Obtainable at cost of $1.00 for 2 copies.

Sarco Company, Inc. "How Increasing Your Steam Costs Can Save Money". Booklet No. 2171. Consists of 16 Questions and Answers for the executive.

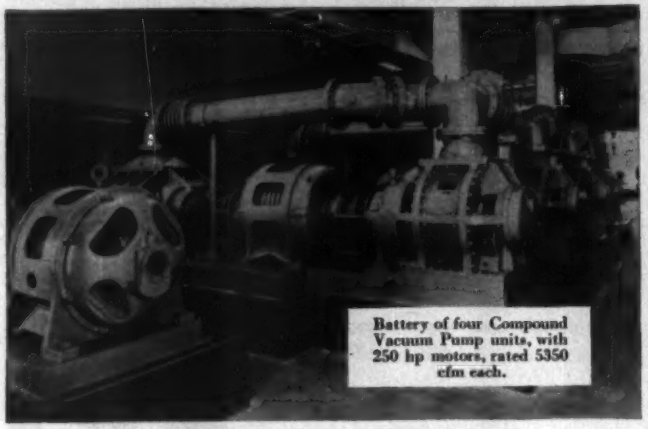
Taylor Instrument Companies. Booklet, "Taylor Technology". Centennial issue. Contents, How We Started; Research, Design and Development; Manufacturing Facilities; Quality Control and Inspection; etc.

Steel and Tubes Division Republic Steel Corporation. Bulletin, "Now You Can Reduce Costly Wiring Raceway Replacements With Electrunite E. M. T". Sales and technical with engineering data.

Towmotor Corporation. Broad-side, "Towmotor-ize For Versatility". Illustrates and describes 14 special purpose accessories which broaden the versatility of fork lift trucks.

Superintendent of Documents, U. S. Printing Office. Book, "Crop in Peace and War". 968 pp., price $2.50. The 1950-51 Yearbook of Agri. Deals with the processing or major farm products, byproducts, utilization of waste & secondary materials, etc.

Library of Congress Photoduplication Service, Publication Board Project. Report, PB 103 184, "Bacteriological Retting of Ramie, Flax and Tropical Fibers New French Process". By, Seymour M. Finger, of the U. S. Embassy, Paris, France. In addition to the description of the new process and the tests conducted, the report contains information on new methods of cultivation and processing of ramie, one of the strongest of natural fibers. 13 pp. including table and enclosures. $1.75 in microfilm, $2.50 in photostat. Orders should be accompanied by remittance payable to the Librarian of Congress.



Battery of four Compound Vacuum Pump units, with 250 hp motors, rated 5350 cfm each.

LOOK FOR ALL 5 WHEN YOU BUY VACUUM PUMPS

These 5 essentials are permanently built into R-C Cycloidal Vacuum Pumps for paper mill operation:

1. **LOW POWER CONSUMPTION**—because units are recommended, either single or compound, to operate at the most efficient point.
2. **NEGLIGIBLE FRICTION LOSSES**—no contact between impellers or impellers and casings.
3. **HIGHER SPEEDS**—permitting direct connection to standard motors, saving first cost, space and weight.
4. **FLEXIBILITY**—to meet varying demands; suction automatically overcomes resistance in system.
5. **DEPENDABILITY**—long-time, attention-free operation, due to simplified design and construction.

With other important advantages, these 5 essentials account for the wide use and popularity of R-C Vacuum Pumps, for new installations or replacements. Send for Bulletin 50-B-17.

Roots-Connersville Blower Corporation
510 River Avenue, Connersville, Indiana

ROOTS-CONNERSVILLE
BLOWER BUILDERS SINCE 1854
ONE OF THE DRESSER INDUSTRIES

NEW SUPPLIES

Airdry Protective Coating

Neoprene, an airdry protective coating for industrial maintenance work on structural steel, concrete, wood and exterior surfaces of tanks and equipment, is in production.

Applied by brush or spray gun in a single coat of 5-10 mils thickness, its field of usefulness will be in applica-

tions where intermittent contact with liquids or constant exposure to corrosive fumes create protective coating problems too severe for the best types of bituminous or oil-base industrial paints, the manufacturer states. Under conditions where such paints fail in two or three years, the new coating is expected to have a useful life of five or ten years. An outstanding feature of the new *airdry* coating is the fact that it develops its desirable physical properties without benefit of heat. It is a solvent solution of a specially developed neoprene composition—it will not gel or "set up" in the container, but will cure at normal temperatures after the solvent has evaporated, it is said.

Synthetic Rubber Flooring

Many advantages are claimed for a new synthetic rubber flooring material recently marketed. Most important of these is exceptional strength and long life, high resistance to acids, alkalis, water and other destructive agents; low cost and ease of application. Vulcrete is said to dry to a pleasing light concrete color, to bond inseparably without need for preliminary bonding with wood, metal, concrete, brick slate, stone, asphalt mastic, composition or similar bases, to have very high resistance to point loads of considerable weight, and to be a pronounced sound dampener when used over steel plates.

Anti-Fatigue Matting

The new anti-fatigue matting is designed to provide deep pile foot comfort and working ease to shop and production-line workers. Called "Lite-Step", the mat is an unusual combination of 1/8 inch corrugated rubber top wedded to a 1/4 inch live sponge rubber base. Comes in all lengths, and up to 72 ins. in width. Requires no installation. The manufacturer claims that it does not slip or slide, is odor-free, and resistant to most ordinary chemicals.

Flux-Coated Aluminum Alloys

Silicon-free, flux-coated aluminum welding alloys for oxy-acetylene and oxy-hydrogen welding have been marketed. For architectural structures and other applications where an anodized silicon bearing welding rod has shown an objectionable dark weld, EutecRod 22FC is said to provide a base metal matching solution. Corrosion resistance and color, as well as physical properties of the weld are said to closely match the aluminum. The flux coating is "low melting" to provide for minimum heat aplication, it is said. Once melted, it flows in a transparent pool which permits the welder to watch the progress of the work. The special flux is right on the alloy in the proper amount to provide for easy welding and good cleaning action, the manufacturer states.

Translucent Glass Paint

A new glare and heat reducing paint that will form a permanent bond on glass has been developed, named Sunshade Blue, the paint dries rapidly to

Prove B Waxes IN YOUR OWN LAB...

...YOUR TEST IS BEST...

Properties

"Properties"—is a nice sounding word, but when you're talking about microcrystalli waxes it simply doesn't mean much. The dividing lines between various types of micro-waxes are so hazy that efforts to scientifically classify them simply haven't been too successful. That is why Bareco continually urges you to write for samples of their performance-proven waxes. If you were to receive a personal letter from one of Bareco's chemists, this is probably the way it would read, "Dear Mr. Industry: We produce top grade microcrystalline waxes, but we don't know all of your problems. Why not consult with us, as so many others have done, to determine how our waxes can be used in your processes. You may never realize how they can help unless you take samples of our product and test them in your own laboratory. We will send samples for your investigation. If technical assistance is needed we will be glad to help." Bareco waxes MAY save you a lot of money . . . Bareco waxes MAY put you on the road to a better product . . . why don't you find out by writing for samples today. In the meantime, here's food for thought—

Very low water transmission rates. Chemically inert.
Free of objectionable odors. Excellent heat sealing characteristics.
Supplied in a wide range of melting points, color, and hardness.
WRITE FOR "THE WAX STORY", A NEW PAMPHLET SERIES

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Process Studies, Design, Specifications and Engineering Supervision
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Steam, Hydraulic and Electrical Engineering Reports, Consolidation and Valuations
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FOR OVER 10 YEARS
we have been converting for others. We can put your facial tissue into boxed goods, toilet rolls or dinner napkins at a very reasonable price.
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CHEMICAL PULP MILL ENGINEERS
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EXPANSION PLANNED ENGINEERED
Every phase of your expansion program can be handled efficiently and economically by Ferguson's experienced Paper Mill Specialists.
Preliminary Discussions in Confidence and Without Obligation.
THE H. K. FERGUSON COMPANY
ENGINEERS AND BUILDERS
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FIBER RESEARCH AND SERVICE
Semi-Chem. and Chemical Pulp Processes
Pilot Plant Facilities
THE KINSLEY CHEMICAL COMPANY
Cleveland 11, Ohio

AMERICAN PAPER AND PULP ASSOCIATION'S PAPER PRODUCTION RATIO REPORT

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	June 9	June 16	June 23	June 30	July 7
1951	104.1	101.5	99.4	95.7r	62.6
	June 10	**June 17**	**June 24**	**July 1**	**July 8**
1950	96.4	97.3	99.5	97.7	51.8

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1950	92.6	95.6	96.7	95.4	96.4	97.7	85.3	99.6	96.1	101.0	99.6	91.2	95.8
1951	99.3	101.3	102.3‡	103.1‡	102.5‡	100.2‡							

‡ Preliminary.
r Revised.

COMPARATIVE YEARLY SUMMARIES

	1944	1945	1946	1947	1948	1949	1950	1951
Year to Date	87.2	87.6	99.1	103.6	98.4	86.2	94.2	100.3
Year Average	88.1	89.4	100.1	104.3	96.2	88.6	95.8	

PAPERBOARD OPERATING RATIOS†

	June 9	June 16	June 23	June 30	July 7
1951	102	103	103	103	62
	June 10	**June 17**	**June 24**	**July 1**	**July 8**
1950	94	93	94	94	55

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1950	88	92	91	92	91	94	82	100	96	102	101	95	94
1951	102	105	104	105	104	103							

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

Note: The chart shows the ratio through December 1950 on the basis of 6-day capacity. Beginning with January 1951 the ratio is shown on the new basis of normal 6- and 7-day capacities. Corresponding weekly and monthly ratios for 1950 on the new basis, shown in the tables above, are somewhat lower.

Paperboard operating ratios continue on the basis of a 6-day week.

† Per cents of operation based on "inch-hours" reported to the National Paperboard Association.

make a weather-proof frosted coating which may be applied by either brush or spray-gun. According to the manufacturers it not only cuts down glare, and is heat reducing, but the soft blue relieves eyestrain and tension in workers, and reduces fading and discoloration of papers and fabrics.

OBITUARIES

Paul Mulvanity, 46, sales executive of the Nashua Gummed and Coated Paper Co., Nashua, N. H., died suddenly July 7.

Edmund Francis Murphy, 52, northern divisional sales manager for Bird & Son, Inc., East Walpole, Mass., died suddenly July 3.

Mrs. Robert Eminger, wife of Robert Eminger, former secretary of the American Paper and Pulp Mill Superintendents Association, died July 9.

Ernest Putnam Holder, 52, vice-president of the Westcott Paper Products Co., died July 3. A native of Niles, O., he was a member of the Adcraft Club of Detroit.

Louis A. Seinsheimer, 76, for the last fifteen years chairman of the board of directors of the Clopay Corp., manufacturers of paper products, died in Cincinnati, Ohio, on July 10.

His father founded the company's forerunner, the Seinsheimer Paper Corp. in 1869. The name, Clopay, was adopted in 1933. Mr. Seinsheimer, who was associated with the organization for more than fifty years, succeeded to the presidency upon his father's death in 1926.

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STAINLESS STEEL CASTINGS
FOR ALL EQUIPMENT EXPOSED TO CORROSION BY SULPHITE ACIDS OR OTHER CORROSIVE AGENTS
MICHIGAN STEEL CASTING CO.
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APPLETON FELTS

APPLETON WOOLEN MILLS

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WHENEVER PIPING IS INVOLVED
Grinnell Company Inc., Providence, R. I.
Sales Offices and Warehouses in Principal Cities

CLEARING HOUSE

HELP WANTED

MEN WANTED—POSITIONS OPEN

We can place—assistant manager wet machine board mill; asst. supt. experienced on lightweight carbonizing tissue; Fourdrinier, Cylinder and Tandem machine foremen; asst. supt. Cylinder machine board mill; receiver-shipper for board mill; head beater engineer for board mill.

Salesmen to sell paper, also mill mechanical equipment and supplies to paper mills; chemical engineers, chemists and laboratory men; chief power plant engineers; plant engineer $7500 to $9000 year; bleach house foreman; machine tenders and back tenders.

LIST YOUR CONFIDENTIAL APPLICATION WITH US

to keep informed of attractive positions open in the pulp and paper mills.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St., Boston 8, Mass.

SPECIALISTS IN PLACING PULP AND PAPER MILL EXECUTIVES J-20

TECHNICAL DIRECTOR OR ASSISTANT

Specialty Kraft Paper Mill

Experienced in carbonized tissue, light weight kraft specialties, colors, etc. Excellent opportunity, liberal salary, permanent. Mill located in South. Write giving complete resume, salary requirements. Confidential. Box No. 51-359 care Paper Trade Journal. J-27

CHEMIST OR CHEMICAL ENGINEER: One of the leading chemical companies desires chemist or chemical engineer to do laboratory research on end uses for new products developed in existing research department. At least 3 years experience essential in one or more of following products: waxes, paper coatings, polyethylenes and other plastics. Permanent position, good salary, liberal employment benefits. Give complete information in letter. Replies confidential. Address Box 51-332 care Paper Trade Journal. J-20

Wanted — OPERATING ENGINEER to take charge of operations and maintenance of a paper mill power plant, size—5,000 KVA — steam generation, about 80,000 pounds per hour. Mill located in Southwest. In reply state qualifications, previous experience and salary expected.

Address Box 51-351 care Paper Trade Journal. J-20

AGGRESSIVE SALES ENGINEER

Opportunity to join well known established machinery firm. Technical ability and paper making background necessary. Knowledge of beating and pulping process and equipment desirable. Some sales experience or sales inclination helpful. Must be able to travel in territory. Tell us about yourself in your letter. Address Box 51-301 care Paper Trade Journal. TF

HELP WANTED

HELP WANTED—MALE

SALES MANAGER—
ASSISTANT SALES MANAGER

Long established middle west manufacturer of specialty equipment for pulp and paper mill wishes to engage services of man who has knowledge of mill operation. Prefer man who has been selling in Middle West and New England mills but will also consider others possessing suitable personality, education, and mill experience background who are interested in a position where initiative and aggressiveness will pay off in a growing business. Work will consist of traveling about four months of the year with balance of time devoted to working in home office handling correspondence with customers. Applicants should state age, education, marital status, and complete experience background in first letter. Write Box 51-348, care Paper Trade Journal. J-27

PLANT ENGINEER—Bldg. Materials and Plastic Floor-covering Manufacturer, new large-scale New Jersey plant. Applicants must have minimum 6 years plant experience in maintenance, operations and design. Must be familiar with wide variety of process plant equipment and utilities systems. Must be college graduate engineer. Please submit resume with reply. Box No. 51-290, care Paper Trade Journal. A-3

SALARIED POSITIONS $3,500 to $35,000. We offer the original personal employment service (established 41 years). Procedure of highest ethical standards is individualized to your personal requirements. Identity covered; present position protected. Ask for particulars. R. W. BIXBY, INC. —117 Dun Bldg., Buffalo, 2, N. Y. TF

WANTED — Machine Tenders and Back Tenders for corrugating medium and liner mill. Fourdinier and cylinder machines. Located in Western Pennsylvania; good working conditions; pleasant surroundings and very good labor relations. Call collect—Tarentum 1470, TARENTUM PRODUCTS CORPORATION, Tarentum, Pa. TF

MID-WESTERN FOURDRINIER SPECIALTY MILL has opening for experienced Production Superintendent. References required. Address Box 51-278 care Paper Trade Journal. A-31

WORKING SUPERINTENDENT for small, fast growing Eastern mill making lightweight specialties. Cylinder machine experience essential. State qualifications and salary expected. Address Box 51-87 care Paper Trade Journal. TF

WANTED — Technical Service Director for long established Mid-western integrated Kraft mill manufacturing Kraft and specialties. Experience necessary. Qualified party will supervise control of paper and pulp mills. Excellent laboratories and working conditions. Applicant should submit complete qualifications. Write Box 51-344 care Paper Trade Journal. J-20

HELP WANTED

WANTED — Machine Tenders on Cylinder Machine in progressive test liner board mill making .016. Good opportunity for right man. Address Box 51-364 care Paper Trade Journal. A-3

GRADUATE CHEMIST to coordinate technical control in fine paper mill located in midwest. Experience in rag paper desirable but not essential. Address Howard Paper Mill, Inc., 115 Columbia St., Dayton, 7, Ohio. J-20

WANTED — Working Foreman capable of setting up and operating small envelope factory in Southeastern Coastal City. Reply, giving experience and references to Box 51-363 care Paper Trade Journal. J-20

WANTED—Back Tenders in mill making jute liner and corrugating medium. Good opportunity for advancement. Address Box 51-365 care Paper Trade Journal. A-3

PLANT SALESMAN wanted for established Philadelphia Paper Jobber. Can use man looking for a better opportunity or one that wants to make an investment in a business. We carry items for industrial plants and retail outlets. Address Box 51-361 care Paper Trade Journal. J-27

PERSONNEL SERVICE ASSOC., 115 State Street, Springfield, 3, Mass. Confidential Placement Service. Personnel Counselors. Pulp —Paper—Converting—Merchandising. Domestic —Foreign. Please ask for particulars. J-20

SUPERINTENDENT for 2 machine paper mill in S.A., 35/40 yrs. old; excellent position. Submit resume. PERSONNEL SERVICE ASSOC., 115 State Street, Springfield, 3, Mass. J-20

WANTED—Tour Boss for .016 liner board mill making 70 tons per day. Must be capable. Give detailed experience and background. Address Box 51-366 care Paper Trade Journal. A-3

FINISHING ROOM FOREMAN experienced in flat-cutting and rewinding. Immediate employment, high salary. Address Box 51-370 care Paper Trade Journal. A-3

SITUATIONS WANTED

EXECUTIVE ACCOUNTANT COMPTROLLER

Capable, cost minded administrative executive, age 40, available immediately. Fully experienced in multi-plant paperboard, folding carton and printing industry. Box 51-197, Paper Trade Journal. A-10

PAPER CONVERTING ENGINEER

with 6 years actual experience on bag, coating, waxing and printing equip. in design and maintenance, and 15 yrs. exp. machine and tool design. Age 40, married, energetic and efficient, good education, and would like to reside in the South West. Box 51-360 c/o Paper Trade Journal. A-10

RATES FOR CLEARING HOUSE ADVERTISING

HELP WANTED—10c a word. Double rate for heavy face type. Minimum charge $3.50.

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SITUATIONS WANTED

PLANT MANAGER—Paper and Board and their conversion; wants challenging opportunity. Highly successful in organization; administration; labor relations and high level production. Presently employed. Address Box 51-41 care Paper Trade Journal. J-27

SALESMAN—10 years experience selling to paper manufacturers. 5 years sales manager paper jobbing house. Wish to represent paper mill, converter or company serving paper manufacturers in Middle Western States. Address Box 51-354 care Paper Trade Journal. A-3

PLANT ENGINEER—Supervisor of maintenance and production; facial and toilet tissue converting plants. Can design and build automatic machines. Redesign old equipment for maximum production. Address Box 51-358 care Paper Trade Journal. J-20

FOR SALE

FOR SALE—74" Knowlton Traveling Shear Cut-off Knife.—Bargain. Address Box 51-105 care Paper Trade Journal. TF

FOR SALE

FOR SALE

1—196" number 19 Cameron slitter & winder
1—160" Cameron Slitter part
1—38x180" face suction press roll
1—Brand new Allis Chalmers steam turbine with reducer and pump, in original crate
3—Hydraulic presses, 800 ton, platen 30 x 32, with pump
1—66x240" suction couch roll with gear drive
3—Rubber covered press rolls 52" dia. x 232" face. 1½" rubber
1—Granite top press roll 36 x 231" face
2—237" Vickery doctor assemblies, one right hand and one left hand
1—Harmon twelve plate screen, plates cut about .014, with scraper attachment
1—100" Voith Slice
5—Dryers 60 x 174", 20—48" x 40"

FRANK H. DAVIS COMPANY
175 Richdale Avenue, Cambridge, Mass.
J-27

FOR SALE

FOR SALE

100—Black & Clawson Dryers tested for 150# Hydrostatic pressure 48" dia., 46" face nickel plated surface. Complete with gears and bearings. These dryers are in perfect condition. Shipment within 30 days.

Address
Box 51-362 c/o Paper Trade Journal

FOR SALE—65" Seybold Paper Cutter; 36" Slitter & Rewinder, 48" Sheeter with Layboy; 29 x 40 Thomson Platen Die Cutter; 6" Brightwood Box Machine. Address Box 51-217 care Paper Trade Journal. TF

MACHINERY WANTED FOR OUTRIGHT PURCHASE
Paper Machines, Pulp and Paper Mill Machinery and Converting Equipment.

BEATERS
1—Dilts 750 lb. Iron Tub. Roll 44" face x 80" diameter.
1—Downingtown 1000 lb. Iron Tub. New roll 48" face x 48" diameter.

BELTING—NEW
67 feet 8" 13 ply Goodyear Rubber Belting.
150 feet 8" 4 ply Silver Duck Transmission belt.

CALENDER ROLLS
46 Chilled Iron Rolls—Assorted sizes.

CALENDER STACKS
1—8 roll—62".
1—8 roll—62". All rolls bored for steam.
1—Lobdell 8 roll 124" Calender Stack, with doctors and drives.
1—Farrel Birmingham 110" Calender Stack with doctors. 2 rolls bored for steam.
1—B-C 72" trim 9 roll with doctors, levers and drives. 3 roll bored for steam.

COMBINING MACHINE
1—Black Clawson 54" Combining Machine with 4—42" diameter and 1—24" diameter Dryers. Motor, pumps, tanks, etc. Complete.

CONVEYOR
1—15½ ft. long x 30" wide—with motor.

CYLINDER MOLDS
1—154" face x 90" diameter, with stainless steel shafts.

DRYERS
3—124" face x 48" diameter.
1—72" face x 48" diameter—with gear.
1—120" face x 10" diameter—Baby Dryer.
1—60" face x 38" diameter.
1—152" face x 48" diameter, with bearings.
3—100" face x 48" diameter—with gears and bearings.
5—110" face x 42" diameter with bearings and gears.
1—117" face x 48" diameter.
1—100" face x 42" diameter Creping Dryer.
4—42" face x 36" diameter, with frames, gears and bearings.
10—60" face x 60" diameter, with gears, bearings and steam joints.

EXTRACTOR ROLLS
1—Downingtown Extractor Roll 120" face x 24" diameter. Anti friction bearings.

FILTER PRESS
1—New Sperry filter press, size 12, type 41.

FILTERS
1—Oliver Vacuum Filters. Cylinder 10' face x 9'3" diameter. Steel vat. 1200 GPM capacity.
1—Oliver Vacuum Filter, Cylinder 8' face x 5' 6" diameter. Iron end vat.

FLAT SCREENS
2—8 plate Sandy Hill Roller Shoe with scrapers.
6—Harmon 12 plate.
1—Sandy Hill 12 plate roller shoe.
1—Bagley & Sewall 8 plate, with scrapers and plates.

JORDANS
1—26 Niagal, for motor drive.
1—Jones Majestics with base and couplings—
1—23 Asbestos with base and coupling.
1— Jones Majestic, Stainless Steel Fitting.

MOTORS
1—Allis Chalmers 30 h.p. 440 v. 880 r.p.m.
1—Allis Chalmers 25 h.p. 440 v. 880 r.p.m.
25 others 440 v. motors from 2 h.p. to 15 h.p.

PULP EQUIPMENT
1—Nitts & Merrill #17 Pulpwood chipper.
1—Bird ball bearing Pulp Screen. Practically new. Used 6 months.
4—APPLETON Ball Bearing Pulp Screens—30 ton capacity.

PULPERS
3—92 Lamson.

PUMPS
44—Centrifugal Pumps, open & closed impellers. Direct connected or Belt Driven. Extended base for motor. Assorted capacities and heads. Most used less than one year. Also new Goulds Pumps.

REDUCERS
1—Link Belt 40 h.p. Ratio 2.5-1, 880 r.p.m.-227 r.p.m.

ROLLS—PRESS, COUCH, etc.
32—Press rolls, brass and rubber covered.
16—Couch rolls, brass and rubber covered.
250—Brass and steel carrying rolls.

ROTARY SCREENS
1—42A Bird, fully rebuilt with new vats, plates, etc.—enclosed drive.
1—32 Bird—stainless steel vat.

SAVEALLS
1—Oliver, Vacuum type, cylinder 120" face x 60" diameter, with steel vat.

SCREW PRESSES
1—Valley Voith Screw Press Size 2.

SHEETERS
1—48" Kidder Reel Sheeter.
1—64" Double Dilion with 10 roll Rack Stand.
1—Moore & White 81" with Erie Layboy and 10 roll basketstand.

SHREDDERS
1—American 27" Hammermill, anti-friction bearings.
1—Jeffrey 28½" Knives—7 knife rotor—6 knife bed plate. Ball bearing.

SLITTERS AND WINDERS
1—Beloit 120" Paper Machine Slitter and Rewinder—42" rewind.
1—Hudson Sharp 60" Wax roll slitter and rewinder.
1—Langston 40" shear cut with motor and 20 sets of slitters.

STEAM TURBINES
1—De Laval 225 h.p. Initial pressure 140 p.s.i. Exhaust pressure 35 p.s.i. Complete with gear reducer.
1—De Laval Variable speed—375 h.p. at 135 pumps and 30 p.s.i. exhaust. Complete with gear reducer.

STOCK PUMPS
1—Sherlin 10 x 30 Single Plunger Pump.

STOCK REGULATORS
2—Moritt Stock Regulators.

SUCTION PRESS ROLLS
1—Sandusky 57" drilled face x 14" diameter.

THICKENER
1—Woods Thickener with anti friction bearing. Cylinder 40" diameter x 132" face.

TOILET TISSUE PERFORATOR
1—Paper Converting Machine Co. automatic 81" Perforator, slitter and Winder—with three motors—ball bearing.

VACUUM PUMPS
2—Nash H-5 Vacuum Pumps
1—Nash 24.
1—Nash 23.
1—Nash 22.

WATER FINISH UNIT
1—Valley Micronist Unit for water finish on paper—120" Double.

WAXING MACHINES
1—84" Pendovin complete from 1st off to single roll rewind section.
1—52" Special—complete from 2 roll 1st off to single roll rewind.

WHY LIST YOUR EQUIPMENT? — WE WILL BUY IT.

FOR SALE

Cameron Slitters

1—62" Type 10-S.
1—52" Type S-S.
1—32" Type 40-2A.
1—42" Type 40-1-AF.

OTHER SLITTERS

1—84" Langston Type B.—Rewinds 50" diameter rolls.
1—52" Knowlton Combined Slitter and Rewinder and Rotary Sheet Cutter.
1—60" Hammersly Score Cut.
1—30" Langston Type A Shear Cut S & R.
1—42" Langston Center Wind Duplex Shear Cut Slitter and Rewinder.
1—30" Falco Model B.
1—32" Hobbs Shear Cut, double rewind slitter and rewinder.

POWER PAPER CUTTERS

12—Seybold, 1—74", 10ZD, 20th Centurys, 44" 54" & 64" & 74". 1—42" & 1—50" 10Z, 1—40" 6E. Holyokes, 34", 44", 48" and 54".
3—Oswegos; 38", 44" and 57"; 1—Sheridan, 50"; 1—Dexter, 57"; 2-Acme, 32" and 42"; 1—S&W Under Cut 63".

MISCELLANEOUS MACHINES

3—Schultz Automatic Roll Machines. Take paper 12" to 24" wide. Roll lengths 12' to 150'.
1—86" Creping Machine. Has three 5' diameter dryers, complete unit.
1—64" Creping machine, complete with automatic Kohler system.
Several Die Presses, Seybold and Sheridan, various sizes.
1—Hudson-Sharp #4 special Tissue Paper Folder.
1—Complete Set Potdevin S.O.S. Bag Machines—Range ¼ to 2½'s.
1—72" x 45" Erie Layboy.
1—Modern Clipper Bag Machine for cellophane and pliofilm materials. Makes flat or gusset bags, single or duplex, range 1¼" to 9" in width, 3" to 27" in length.
1—New 24"-2 color, Roll to Roll Aniline Press.
1—Waldron 14" wide, 4 color, roll to roll rotary press. Additional 4 colors can be added for tissue napkin printing.
1—20" Champlain, 4 color Rotogravure Press.
1—84" Miami le-type Waxing Machine, manufactured by Ditts Machine Works with 1 refrigerating unit size 4" x 4".
2—Potdevin Waxing Machines, 62" wide.
1—Paper Converting Machine Co.'s Model No. 215, three web, ¼ fold napkin machine with embossing attachment.
1—81" Hudson-Sharpe 30-B Facial Toilet Convertor.
1—Lawtomatic Model "A" Toilet Roll Wrapper.
2—81" Dietz Toilet Paper Converters, suitable for standard and facial tissue.
2—Brand new 81" Dietz, very latest type, friction rewind combination toilet and towel roll convertors. Automatic counters and stop motions.
1—44" Dillon Duplex Rotary Sheet Cutter.
1—42" Hobbs Embosser, with Vickers 20 ton hydraulic pressure attachment.
2—22 Lamneye Pulpers.
1—Rietz Pulp Disintegrator.
1—48" German Dornbusch Embossing machine with 2 sets of embossing rolls.
1—88" Holyoke Roll to Roll Embosser, Heavy Type. Two extra new rolls, one steel and one paper.
1—36" Hot Melt Coating and Laminating Machine.
1—42" Robinson Rotary Card Cuter.
1—40 Norwood Plater, AC Reversing Motor Equipment.
1—110" Model 29 Hamblet Duplex Rotary Sheet Cutter, slitting attachment, Erie automatic layboy and twelve roll backstands.
1—74" Hamblet Duplex Rotary Sheet Cutter, slitting attachment, 4 roll backstands, Moore & White layboy, 15 HP Reliance Drive.
1—55" nine roll Holyoke Super Calender stack with AC motor equipment.
1—40" Holyoke, 8 Roll, Stack of Super Calenders.
1—Staude, "Champion" folding and glueing machine.
1—60" Parry Liner, 11 roll type. New 1949. Never used.
1—74" wide Hudson-Sharp Duplexing machine #2198, 3 coating units, including asphalt.

GIBBS-BROWER CO., INC.

Please address reply to Room 902
21 East 40th Street, New York 16, N.Y.
Telephone Lexington 2-8789 J-30

FOR SALE

GOOD VALUES FOR SALE

52" Cameron type 8 model 5 Slitter.
42" Cameron 20-2A Slitter, like new.
72" Cameron type 8 model 10 Slitter.
76" Cameron Rewinder.
48" Kidder type CH Rotary Slitter.
42" Moore & White Sheeter with Layboy.
45" Hamblet Sheeter.
49" and 50" Finley Sheeters.
110" Hamblet Sheeter with extension delivery and back-stands.
36" Beck Sheeter, no layboy.
63" Sheridan Auto. Power Cutter.
NEW Baling Presses, both hand and power.
NEW Hamblet Sheeters, any size, for any purpose.

THOMAS W. HALL COMPANY, Inc.
120 West 42nd St., New York 18
(Plant at Stamford, Conn.) TF

FOR SALE

1—Simplex Noblewood Mill, No. 1049 with 400 H.P., 1800 RPM, 550 volt, 3 phase, 60 cycle Westinghouse wound rotor motor. Equipment purchased in 1940 and operated 1½ to 2 years—in good condition.
2—Bird Centrifugers and Extractors with 10 H.P. 575 RPM, 550 volt, 3 phase, 60 cycle vertical motors—Equipment in good condition.

HOLLINGSWORTH & WHITNEY CO.
60 Batterymarch St., Boston, Mass.
J-30

MACHINERY FOR SALE

60" Rotary Kidder, 3 color printing press, prints with flash dry inks, using Stereotype plates; includes waxing head and chilled roller, $7,500; 48" Kidder spot cutter with 10 sheet accumulator, $2,500; 50" Beck Sheeter, $2,000; 42" paper rewinder, $1,000. S. B. Behrens & Co., 115 Onderdonk Avenue, Brooklyn. Phone EV 6-0505. J-27

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For our principals—Publishers.
DOMESTIC AND FOREIGN CANADIAN OR AMERICAN ROLLS OR SHEETS
Any quantity—sizes are acceptable.
We will entertain any kind of confidential deal in behalf of our principals.
Address Box 51-357 care Paper Trade Journal. J-30

WANTED

Serviceable Grocery Bag Machine
8 through 20 lb. sizes.
Recent Model Potdevin preferred.
Address Box 51-346, care Paper Trade Journal. TF

WANTED TO BUY

1—Good used Laminator 60 to 70" wide.
Address Box 51-356 care Paper Trade Journal
J-27

FOR SALE

FOR SALE

1—Premier Type U-3 Colloid Mill, has had little use, in excellent condition. Address Box 51-352, care Paper Trade Journal J-27

FOR SALE—NEW ALL BRONZE FOURDRINIER WIRES AS FOLLOWS: 10/10 MESH 2-166"x61" 2" 2-166"x229" 2" 1—166"x229" 2" and 1—166"x45". MADE BY INTERNATIONAL WIRE WORKS. PRICE .55 cents square foot, or best offer. All prices FOB Miami, Florida.

WARE LABORATORIES, INC.
P. O. Box 1557 Riverside Station
Miami, Florida J-27

PAPER COATING MACHINERY MANUFACTURERS — Waxing, Oiling, Carbon Laboratory Coating and Treating and Plat Resin Measuring and Converting Machines. New improvement. THE MAYER MACHINE COMPANY, INC., 1313 Buffalo Road, Rochester, 11, N. Y. TF

MOORE & WHITE SHEETER—100"—6 roll backstand. Complete layboy and splitting attachments. NU-PAKO, 1090 Myrtle Ave., Brooklyn, N. Y. Tel. CA 6-1612. J-30

FOR SALE—1—114" Slitter and rewinder—Cameron Type. NU-PAKO, 1090 Myrtle Ave., Brooklyn, N. Y. Tel. CA 6-1612. J-30

FOR SALE—22 x 29 and 28 x 37 Seybold embossers; 26 x 38 Thomson Cutter and Creaser. Address Box 51-348 care Paper Trade Journal. J-30

CELLOPHANE FOR SALE—Narrow rolls and small sheets. Large quantities—Reasonably priced. Address Box 51-371 care Paper Trade Journal. J-30

FOR SALE—1—122" Heavy Duty Single Knife Horse Cutter, suitable for Board or Pulp. Address Box 51-373 care Paper Trade Journal. TF

WANTED

Used Slitter & Rewinder Wanted

about 72",
Cameron preferred
State full details
Box #51-317 care Paper Trade Journal
J-30

WANTED

To Purchase A Good Used Jones Standard JORDAN, Or Equal, Suitable For Belt Drive. Give Size, Condition, Price, Etc.

United States Paper Mills, Inc.
Chambersburg, Pennsylvania
J-30

KRAFT PAPER WANTED

30# and 40# preferred.
Immediate payment arranged via Bank Telegraphic transfer of funds.
ENTIRE TRIM MACHINE ACCEPTABLE.
Substantial quantities only—for export.
ALSO INTERESTED—large quantities 50 to 110# Kraft.
Principals only apply.
Address Box 51-353 care Paper Trade Journal. J-30

FOR SALE | **FOR SALE** | **FOR SALE**

FOR SALE

134" FOURDRINIER PAPER MACHINE

Suction Couch Roll 28" dia. Two Presses. 32 Dryers 42" dia., 132" face. One Calender Stack. Two Spool Baloit Reels. Two Drum Slitter and Winder.

OSBORNE PAPER MILL EQUIPMENT CORP.

FULTON, N. Y. PHONE 54

FOR SALE

Sheeter—49" Finlay—Single Rotary Sheet Cutter
Range 19½ to 75" with Hamblet Layboy
6 roll double deck stands
5 H.P. Motor — Reeves Drive
$2500.00

G. B. Goldman Paper Company
316 North Third Street
Philadelphia 6, Pa. J-30

100 Tons per Month
SEMI-BLEACHED
Wet Lap
SULPHITE
PULP
Box 51-369 care
Paper Trade Journal J-20

WANTED

WANTED—Brightwood Box Machine, Shredders, Evaporators, Generators and Boilers, Slitters, Cutters, Hydraulic presses, Sheridan Presses, Dryers. Address Box 51-88 care Paper Trade Journal. TF

WANTED—W & P Shredders, Evaporators, Generators and Boilers, Slitters, Cutters, Hydraulic presses, Sheridan Presses, Dryers. Address Box 51-89 care Paper Trade Journal. TF

WANTED—Sheeter with layboy, to take 80" to 90" sheet, with back stand. Address Box 51-347 care Paper Trade Journal. J-20

WANTED—5 New or Used Angle Drives. 15/35 Horse Power each Ratio 2:1 to 4:1 acceptable Spiral Level or Hypoid. Address Box 51-350 care Paper Trade Journal. J-27

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Panelyte suction box covers.

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No one style of pump can efficiently handle *all* types of paper stock. That's why Fairbanks-Morse developed two types of impellers for paper stock pumps.

Figure 5460P pumps have open impellers . . . the ideal type for handling clean, homogeneous stock of heavy consistencies.

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In either style, Fairbanks-Morse Pumps give you the efficient, economical, dependable performance that characterizes all Fairbanks-Morse Pumps. Remember, for every paper and pulp mill need, there is a Fairbanks-Morse Pump that will exactly meet your requirements. For pump selection assistance, see your Fairbanks-Morse pump dealer, branch pump engineer, or write Fairbanks, Morse & Co., Chicago 5, Ill.

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PUMPS • SCALES • ELECTRIC MOTORS • GENERATORS
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Naugatuck Chemical Division of U. S. Rubber Co.
Niagara Alkali Company
Nopco Chemical Co.
Pittsburgh Plate Glass Co., Columbia Chemical Division
Reichhold Chemicals, Inc.
Rohm & Haas Co.
Virginia Smelting Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

CHESTS
The Bagley & Sewall Company
E. D. Jones & Sons Co.
Kalamazoo Tank & Silo Co.
Shartle Bros. Mch. Co.

CLEANING MATERIALS
American Cyanamid Company Industrial Chemicals Division
The Dow Chemical Company
E. I. du Pont de Nemours & Co., Inc.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Pittsburgh Plate Glass Co
Wyandotte Chemicals Corp., J. B. Ford Division

CLUTCHES
Appleton Machine Co.
The Bagley & Sewall Company
Black Clawson Company
Farrel-Birmingham Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Bros. Mch. Co.
Stephens-Adamson Mfg. Co.

COATING MACHINERY
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
The Mayer Machine Co., Inc.
Moore & White Co.
Perdevin Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corporation, John
Weber, Herman G., & Co., Inc.

COATING MATERIALS
American Cyanamid Company Industrial Chemicals Division
E. I. Du Pont De Nemours & Co., Inc.
B. F. Goodrich Chemical Co.
The Goodyear Tire & Rubber Company
Hercules Powder Co.
J. M. Huber Corp.
Monsanto Chemical Company
Naugatuck Chemical Division of U. S. Rubber Co.
Nopco Chemical Co.
Plaskon Division, Libbey-Owens-Ford Glass Co.
Reichhold Chemicals, Inc.
Wyandotte Chemicals Corp., Michigan Alkali Div.

COGS
The N. P. Bowsher Co.

COMPLETE FOURDRINIER ROLL GRINDING
Manchester Machine Co.

COMPRESSORS
Allis-Chalmers Mfg. Co.
Nash Engineering Co.
Roots-Connersville Blower Corp.

CONDENSATE FILTERS
Hungerford & Terry, Inc.
The Permutit Company

CONSISTENCY REGULATORS
Ashcain Regulator Co.
Bird Machine Company
DeZurik Shower Company
Paper & Industrial Appliances

CONSTRUCTION CONTRACTORS
C. M. Guest & Sons

CONSULTING ENGINEERS
Black Clawson Company
Dilts Machine Works
Ebasco Services
Frank W. Egan & Co.
Alvin H. Johnson & Co., Inc.
Main, Inc., Chas. T.
The Rust Engrg. Co.
Shartle Bros. Mch. Co.
J. E. Sirrine & Co.
Frank C. Vaughan
John Waldron Corp.
H. G. Weber & Co., Inc.

CONTINUOUS DIGESTER
Paper & Industrial Appliances

CONTROLLERS
Black Clawson Company
The Brown Instrument Co.

CONTROLS
The Brown Instrument Co.
Johnson Corp.
Foxboro Control Co.
Shartle Bros. Mch. Co.
Sickle Steam Specialties Co.

CONVERTING MACHINERY
The Bagley & Sewall Company
Egan, Frank W., & Co.
John Waldron Corp.
Dilts Machine Works

CONVEYORS
Black Clawson Company
Murray, D. J., Mfg. Co.
Ross Engineering Corp., J. O.
Shartle Brothers Mch. Co.
Stephens-Adamson Mfg. Co.

CORES
Elixman Paper Co.
Smith & Winchester Mfg. Co.
Sonoco Products Co.

CORROSION RESISTANT
Amercoat Corporation

COTTON LINTER
Alpha Cellulose Corp.
Railway Supply & Mfg. Co.

COTTON PULP
Alpha Cellulose Corp.

COUCH ROLLS
Beloit Iron Works

COUPLINGS
The Bagley & Sewall Company
Black Clawson Company
Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Lovejoy Flexible Coupling Co.
Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works
Waldron Corp., John

CRANES
Cleveland Crane & Engrg. Co
Whiting Corp.

CURL TESTER
Thwing-Albert Instrument Co.

CUTTERS
The Bagley & Sewall Company
Beloit Iron Works
Black Clawson Company
Dilts Machine Works
Gibbs-Brower Company, Inc
Graphic Arts International Corp.
Thomas W. Hall Co.
Harris-Seybold Co.
Jagenberg-Werke Akt. Ges.
Moore & White Co.
Perkins & Son, Inc., B. F.
Rice Barton Corporation
The Sandy Hill Iron & Brass
Taylor, Stiles & Co. Works
The Smith & Winchester Mfg. Co.

CYLINDER MOULDS
Manchester Machine Co
Rice Barton Corporation

CYLINDERS
M. W. Jenkins Sons, Inc.

DAMPENERS
Perkins & Son, Inc., B. F
Valley Iron Works Co.

DECKLE WEBBING
Williams-Gray Co.

DEFIBRATORS
American Defibrator Co.

DE-INKING
Dilts Machine Works
General Dyestuff Corp.
Kinsley Chemical Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

BLEACHING CHEMICALS
E. I. Du Pont De Nemours & Co., Inc.
General Dyestuff Corp.
Kindsley Chemical Co.
Nopco Chemical Co.

By-MINERALIZING EQUIPMENT
Hungerford & Terry, Inc.
The Permutit Company

DEMULSIFIERS
Wyandotte Chemicals Corp., Michigan Alkali Div.

DENSOMETERS
Bunge Pulp & Paper Co.
W. & L. E. Gurley

DESIGN CONSTRUCTION
Ebasco Services

DETERGENTS
American Cyanamid Company Industrial Chemicals Division
Calgon, Inc.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

DEWAXING CHEMICALS
American Cyanamid Company Industrial Chemicals Division
General Dyestuff Corp.
Nopco Chemical Co.

DIFFERENTIAL SCALES
Thwing-Albert Instrument Co.

DIGESTERS
Babcock & Wilcox Co.
Blaw Knox Company
Chicago Bridge & Iron Co.
Combustion Engineering-Superheater, Inc.
Lakenweld
Paper & Industrial Appliances
Pusey & Jones Corp.

DISPERSING AGENTS
Calgon, Inc.
General Dyestuff Corp.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

DOCTORS
The Bagley & Sewall Company
Bird Machine Company
Black Clawson Company
Downingtown Mfg. Co.
Lodell United Co.
Lodding Engineering Corp.
The Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DOCTOR BLADES
The Bagley & Sewall Company
Bird Machine Company
Lodding Engrg. Corp.
The Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Simonds Saw & Steel Co.

DRIERS
The Bagley & Sewall Company
Black Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Lakenweld
The Moore & White Co.
Murray Mfg. Co., D. J.
J. J. Ross Company
Red-Ray Mfg. Co., Inc.
Rice Barton Corporation
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

DRILLED SUCTION COUCH ROLLS
Manchester Machine Co.

DRILLED SUCTION DRUM ROLLS
Manchester Machine Co.

DRIVES
Allis-Chalmers Mfg. Co.
Appleton Machine Co.
The Bagley & Sewall Company
Beloit Iron Works
Bird Machine Co.
Black Clawson Company
Dilts Machine Works
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Farrel-Birmingham Co.
General Electric Company
Gibbs-Brower Company, Inc.
Moore & White Co.
Murray, D. J., Mfg. Co.
Pusey & Jones Corp.
Rice Barton Corporation
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Bros. Mch. Co.
Stephens-Adamson Mfg. Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

DRUM WINDERS
Manchester Machine Co.
Rice Barton Corporation

DRYER DRAINAGE
Stickle Steam Specialties Co.

DRYER ROLL PYROMETER
Thwing-Albert Instrument Co.

DUSTERS
Appleton Machine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
M. W. Jenkins Sons, Inc.
E. D. Jones & Son Co.
Moore & White Co.
D. J. Murray Mfg. Co.
John Waldron Corp.

DUSTING BRUSHES
M. W. Jenkins Sons, Inc.

DYESTUFFS
American Cyanamid Company Calco Chemical Div.
Bunge Pulp & Paper Co.
Ciba Company
E. I. du Pont de Nemours & Co., Inc.
Geigy Co., The
General Dyestuffs Corp.
National Aniline Division, Allied Chemical & Dye Corp.

ELECTRIC HYGROMETER
Thwing-Albert Instrument Co.

EMBOSSING MACHINES
Dilts Machine Works
Egan, Frank W., & Co.
John Waldron Corp.

EMBOSSING ROLLS
The Appleton Machine Co.
Gibbs-Brower Company, Inc.
Holyoke Machine Co.
Northern Engraving & Mch. Co.
B. F. Perkins & Son, Inc.
John Waldron Corp.
Wheeler Roll Co.

EMULSIFIERS
General Dyestuff Corp.
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

ENZYMES
Rohm & Haas Co.
Vanderbilt Co., R. T.

EVAPORATORS
Davis Engrg. Corp.
Gaulin-Birmingham Mfg. Co. Inc.
Murray, D. J., Mfg. Co.
Swenson Evaporator Co., Div. of Whiting Corp.

EXPANDERS
Mount Hope Machinery Co.

FANS
General Electric Co.
B. F. Perkins & Son, Inc.
Ross Engineering Co., J. O

FEEDERS
Hoffi Company, Inc.
Merrick Scale Mfg. Co.
The Permutit Company
Stephens-Adamson Mfg. Co.

FELTS
Appleton Woolen Mills
Asten-Hill Mfg. Co.
Draper Bros. Corp.
Huyck & Son, F. C.
Lockport Felt Co.
Morey Paper Mill Supply Co
Shuler & Benningfofen
Waterbury Felt Co.
Waterbury, H., & Sons Co.
Williams-Gray Co.

FELT CLEANERS
Calgon, Inc.
General Dyestuff Corp.
Nopco Chemical Co.

FELT CONDITIONERS
Bird Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works

FELT GUIDES
Black Clawson Company
Frank W. Egan & Co.
Gilbert & Nash Co.
Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

When No One Looked Twice at
BATHING BEAUTIES

When grandmama went swimming
Her bathing suit was ample,
Observe the photograph above
It is a good example.

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The bathing suits, how scanty!
A captivating, clinging "bra"
Abbreviated "panty!"

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We'd dedicate to Draper!

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DRAPER BROTHERS COMPANY
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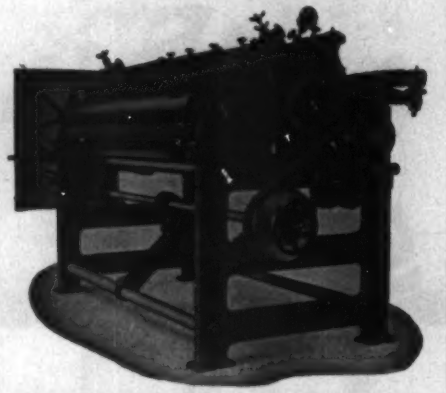
CANTON, MASSACHUSETTS

MODEL 28

ROLLER BEARING CUTTER



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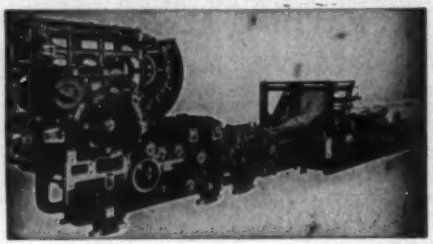

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Vanderbilt Co., R. T.
Wyandotte Chemicals Corp., Michigan Alkali Div.

FILTERS
Bird Machine Company
Holyoke Machine Co.
J. M. Huber Corp.
Hungerford & Terry, Inc.
Johnson Corp.
Moore & White Co.
L. O. Ross Engrg. Corp.
The Sandy Hill Iron & Brass Works
Walworth Company

FITTINGS
The Bagley & Sewall Company
Crane Company
Shartle Bros. Mch. Co.
Walworth Company

FLEXIBLE COUPLINGS
Egan, Frank W., & Co.
Lovejoy Flexible Coupling Co.
John Waldron Corp.

FLOORING, GRATING AND TREADS
The Goodyear Tire & Rubber Company
Norton Co.

FLOW BOXES, STAINLESS-CLAD
Lukens Steel Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works

FORK LIFT TRUCKS
Clark Equipment Company Industrial Truck Division
Elwell Parker Elec. Co.
Towmotor Corp.

FORMATION TESTERS
Thwing-Albert Instrument Co.
Williams Apparatus Co., Inc.

FOURDRINIERS
Beloit Iron Works
Black Clawson Company
Downingtown Mfg. Co.
The Moore & White Co.
Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

FREENESS TESTERS
Testing Machines, Inc.
Williams Apparatus Co.

FURNACES
Hofft Company, Inc.

GASKETS
The Goodyear Tire & Rubber Company

GEARS
The Bagley & Sewall Company
Black Clawson Company
De Laval Steam Turbine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
E. D. Jones & Sons Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Stroh Process Steel Co.
Valley Iron Works Co.
Westinghouse Electric Corp.
Western Gear Works

GRAPPLES
Blaw-Knox Company

GRAVITY FILTERS
Holyoke Machine Co.

GRINDERS
Carthage Machine Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Lobdell United Co.
Norton Company
Samuel C. Rogers and Company
The Sandy Hill Iron & Brass Works

GRINDING WHEELS
Norton Company
Simonds Abrasive Co.

GUIDES
The Bagley & Sewall Company
Egan, Frank W., & Co.
Gilbert & Nash Co.
The Moore & White Co.
Mount Hope Machinery Co.
Rice Barton Corporation
John Waldron Corp.

GUMMING MACHINES
Dilts Machine Works
Egan, Frank W., & Co.
The Sandy Hill Iron & Brass Works

GUMS
National Starch Products, Inc.
Stein-Hall Co., Inc.

HEAT EXCHANGERS AND RECOVERY SYSTEMS
Stickle Steam Specialties Co.
Westinghouse Electric Corp.

HEATING, VENTILATING & AIR CONDITIONING
The Appleton Machine Co.
E. D. Jones & Sons Co.
General Electric Co.
D. J. Murray Mfg. Co.
Red-Ray Mfg. Co., Inc.
Ross Engineering Corp., J. O.
Stickle Steam Specialties Co.
Valley Iron Works Co.

HOSE (Air, Water, Suction, etc.)
The Goodyear Tire & Rubber Company

HUMECTANTS
Aktivin Division, Heyden Chemical Corp.
Hopco Chemical Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

IMPREGNANTS
American Cyanamid Company Industrial Chemicals Division
B. F. Goodrich Chemical Co.

INDENTING MACHINES
Dilts Machine Works

INDUSTRIAL TRACTORS
Clark Equipment Company Industrial Truck Division
Towmotor Corp.

INKOMETER
Thwing-Albert Instrument Co.

INSTRUMENTS, TESTING AND MEASURING
Brown Instrument Co.
Bunge Pulp & Paper Co.
Cambridge Instrument Co.
General Electric Company
W. & L. E. Gurley
B. F. Perkins & Son
Photovolt Corp.
Taylor Instrument Cos.
Testing Machines, Inc.
Thwing-Albert Instrument Co
Williams Apparatus Co.

JOINTS
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Beloit Iron Works
Johnson Corp.
Lovejoy Flexible Coupling Co.
Rice Barton Corporation
Shartle Bros. Mch. Co.

JORDAN FILLINGS
Appleton Machine Co.
Baur Brothers Mfg. Co.
E. D. Jones & Sons Co.
Shartle Bros. Mch. Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

KNIVES
Black Clawson Company
Dilts Machine Works, Inc.
Hamblet Machine Co.
Heppenstall Company
E. D. Jones & Sons Co.
The Moore & White Co.
Simonds Saw & Steel Co.
Taylor Stiles & Co.
Valley Iron Works Co.

KRAFT WRAPPING PAPERS
Canadian Newsprint Supply Co.
Transamerican Industries

LABORATORY CORRUGATOR
Thwing-Albert Instrument Co.

LABORATORY EQUIPMENT
Appleton Machine Co.
Bauer Brothers Co.
Bird Machine Company
Dilts Machine Works
W. & L. E. Gurley
Egan, Frank W., & Co.
E. D. Jones & Sons Co.
Taylor Instrument Companies
Testing Machines, Inc.
Valley Iron Works Co.
John Waldron Corp.
Williams Apparatus Co., Inc.

LAMINATING MACHINES
The Bagley & Sewall Company
Dilts Machine Works
Egan, Frank W., & Co.
Rice Barton Corporation
John Waldron Corp.

LAY BOYS
Dilts Machine Works
Gibbs-Brower Company, Inc.
Hamblet Machine Co
Moore & White Co.

LIFT TRUCKS
Clark Equipment Company Industrial Truck Division

LINTER COTTON
Alpha Cellulose Corp.
Railway Supply & Mfg. Co.

LINTER PULP
Alpha Cellulose Corp.

LUBRICANTS
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Sinclair Refining Co.

ENGLISH ECCO CLAYS CLAYS

ECCO CLAYS TRADE MARK

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Industrial Truck Division
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Dilts Machine Works
Shartle Bros. Mch. Co.
Stephens-Adamson Mfg. Co.
The Wellman Engrg. Co.

METAL TIRES
Stroh Process Steel Co.

MICROMETERS & CALIPERS
Farrel-Birmingham Co.
Lobdell Co.
Stephens-Adamson Mfg. Co.
Tooling Machines, Inc.

MICRO-CRYSTALLINE WAXES
Barcco Oil Co.
Bunge Pulp & Paper Co.
Moore & Munger
Sun Oil Company

MOISTURE CONTENT CONTROL
Cambridge Instrument Co.
Stickle Steam Specialties Co.
Williams Apparatus Co., Inc.

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Allis-Chalmers Mfg. Co.
Fairbanks, Morse & Co.
General Electric Company
Reliance Electric & Engrg. Co

NEWSPRINT
Bunge Pulp & Paper Co.
Canadian Newsprint Supply Co.
Transamerican Industries

NICKEL AND NICKEL ALLOYS
The International Nickel Co

NOZZLES
Spray Engrg. Co.

PACKING BOXES
Clark Equipment Company
Industrial Truck Division
Johnson Corporation
The Moore & White Co.
Shartle Brothers Machine Co.

PALLET TRUCKS
Clark Equipment Company
Industrial Truck Division

PAPER MACHINE DRIVES
The Bagley & Sewall Company
Manchester Machine Co
Rice Barton Corporation

PAPER MACHINES
The Bagley & Sewall Company
Beloit Iron Works
Bagley & Sewall Co.
Black Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Lukenweld
Moore & White Co.
Posey & Jones Corp
Rice Barton Corporation
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co

PAPER MACHINE SLICES
Black Clawson Company
E. D. Jones & Sons Co.
The Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

PAPER TUBE MACHINERY
Dietz Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson Sharp Machine Co.
Jagenberg-Werke Akt. Ges.
Langston Co., Samuel M.

PARAFFINE WAXES
Moore & Munger
Sun Oil Company

PARAFFIN WAX EMULSIONS
Nopco Chemical Co.

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Beloit Iron Works
Black Clawson Company
Dilts Machine Wks.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Murray, D. J., Mfg. Co.
Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

PEBBLE MILLS
F. L. Smidth & Co.

PERFORATED METAL
Allis-Chalmers Mfg. Co.

pH METERS
Cambridge Instrument Co.
Thwing-Albert Instrument Co

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Armco Drainage & Metal Products, Inc.
Babcock & Wilcox Co.
Crane Company
Grinnell Company
Michigan Steel Casting Co.
National Tube Co.
Walworth Company

PIPE FITTINGS
Armco Drainage & Metal Products, Inc.
Crane Company
Grinnell Company
Michigan Steel Casting Co.
Walworth Co.

PITCH CONTROL
American Cyanamid Company
Industrial Chemicals Division
General Dyestuff Corp.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Rohm & Haas Co.

PLASTICIZERS
American Cyanamid Company
Industrial Chemicals Division
Aktivin Division, Heyden Chemical Corp.
B. F. Goodrich Chemical Co.
Naugatuck Chemical
Division of U. S. Rubber Co.
Nopco Chemical Co.

PLATERS
Gibbs-Brower Company, Inc.
Perkins & Son, Inc., B. F.

PLATES
Armco Steel Corp.
Babcock & Wilcox Co.
J. O. Ross Engrg. Corp.
Lukenweld Division
Lukens Steel Company
Timken Roller Bearing Co

PLUGS
The Appleton Machine Co.
Black Clawson Company
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.

POPE TYPE REELS
Egan, Frank W. & Co.
Manchester Machine Co.
Rice Barton Corporation

PRECISION SAMPLE CUTTER
Testing Machines, Inc.
Thwing-Albert Instrument Co.

PRESERVATIVES
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.

PRESS ROLLS
Beloit Iron Works
Rice Barton Corporation

PRESSURE FILTERS
Holyoke Machine Co.

PRESSURE VESSELS
Chicago Bridge & Iron Co.
Combustion Engineering-Superheater, Inc.

PRESSES
Black Clawson Company
Dietz Machine Works
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
The Moore & White Co.
Potdevin Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.
Waldron Corp., John
H. G. Weber & Co., Inc.
Williams Apparatus Co.

PULLEYS
Lovejoy Flexible Coupling Co.
Rice Barton Corporation

PULP CLASSIFIER
The Baner Bros. Co.
Thwing-Albert Instrument Co

PULP CLEANERS
Nichols Engrg. & Research Corp.

PULP STOCK VALVES
Crane Company
Record Pfg. & Mach. Co.
Shartle Brothers Machine Co.

PULPERS
Agnew, Inc.
Baner Brothers Co.
Dilts Machine Works
E. D. Jones & Sons Co.
Morden Machines Co.
Shartle Brothers Machine Co.

PULPS
Alpha Cellulose Corp.
Brown Company
Bunge Pulp & Paper Co.
Canadexport & Co., Inc.
Lyddon & Co. (America), Inc
Parsons & Whittemore, Inc.
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Price & Pierce, Ltd.
Pulp and Paper Trading Co.
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METALS — I.B.B.M. all iron, bronze or stainless steels, body parts plain or rubber lined.

The photo of 24" Fig. 241 I. B. B. M. valve while illustrating the gate bottom wedge system for forced gate seating and "GUILLOTINE" edge for shearing fibre at seat also shows the packing box and yoke as separate units. Both adjustable.

- The "FAST THREADED" screw stem and ball bearing speeds valve operation.
- The packing box is extra deep, is adjustable and provided with specialized lubricated packings and special type gland and compression bolts.
- The yoke mountings are such that yokes for various methods of gate operation are interchangeable.
- Replaceable gate edge shoes are used in valves 10" and larger. These shoes are of special value when valves are installed stem and pipe horizontal.

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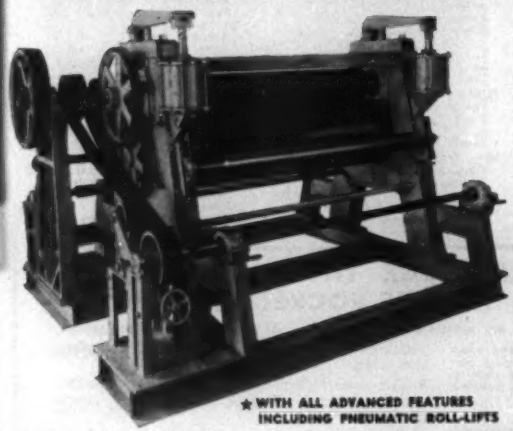

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Thiele Kaolin Co. ..... —
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Timken Roller Bearing Co. Back Cover
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Union Screen Plate Co. 39
United Carbon Co., Inc. ..... —
U. S. Rubber Co. ..... —
U. S. Steel Corp. ..... —
United States Steel Export Co. —
United States Steel Supply Co. —

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Valley Iron Works Co. ..... —
Vanderbilt, R. T., Co. 8
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Virginia Smelting Co. ..... —

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Waldron, John, Corp. ..... —
Walworth Co. ..... —
Waterbury Felt Co. ..... —
Waterbury, H., & Sons Co., Inc. ..... —
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Wellman Engineering Co. .... —
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Whiting Corp. ..... —
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Bruce E. Brown — George Heltzsberg — H. K. Vinton — Franklyn H. Olsen

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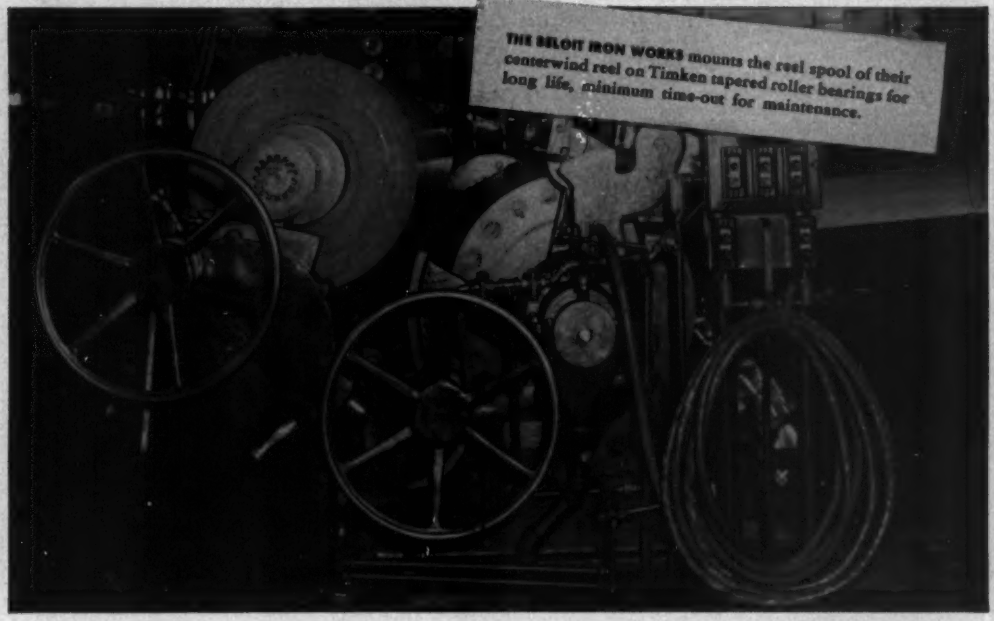
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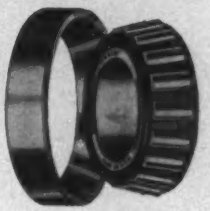

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